

WINDEV®

POWERFULL IDE
& AML SUITE
AGL - DEVOPS
WINDOWS, .NET, LINUX, JAVA

927
NEW FEATURES

Windows 11
Diagram Editor control
Radial Bar chart
IoT & BLE
WEBDEV page generation X3
Application Server in Cluster mode

Obsolete technology warning
Object and face detection AI
PHP 8

PDF new features
Mobile UI: text fine-tuning
Project monitoring: sprint management
WINDEV private store
HFSQL item: Salted password
SEO-ready WEBDEV sessions
iOS 15 - Android 12

+300 WLanguage functions
Windows, iOS, Android, Web,
Java, PHP, and more

NEW VERSION

927

ALL DATABASES

CROSS-PLATFORM CODE:
WINDOWS, .NET, LINUX, JAVA, PHP,
INTERNET, ANDROID, UWP, IOS,

DEVELOP 10 TIMES FASTER

DEVELOP 10 TIMES FASTER

27

The new version 27

brings you an incredible amount of useful features.

Windows 11, new WLanguage functions, object detection AI, Diagram Editor control, secure passwords, WEBDEV cluster, PHP 8, SEO-ready WEBDEV pages in Session mode, ...

Version 27 brings your teams 927 essential new features.

Capitalize on your experience while taking advantage of new technologies and

new tools: this is the benefit provided by version 27.

These new features meet your needs, and are compatible with the elements you already have.

WINDEV 27, WEBDEV 27 and WINDEV Mobile 27 are your work tools. Our team's main goal is to help you succeed, regardless of the environment and target devices your projects are aimed at.

Version 27 will quickly become your favorite version!

Integrated DevOps environment.
No more scattered tools,
go WINDEV!

Legend
WD WB WM: the legend indicates the software in which the new feature is available.
This documentation only presents the new features of version 27. To discover the thousands of features of each product, refer to their respective documentation (at WINDEV.COM, or printed brochure on demand).

927
NEW FEATURES

ORDER
VERSION 27
TODAY!



NEW CONTROL: DIAGRAM EDITOR CREATE, EDIT, DISPLAY, PRINT DIAGRAMS FROM YOUR APPLICATIONS

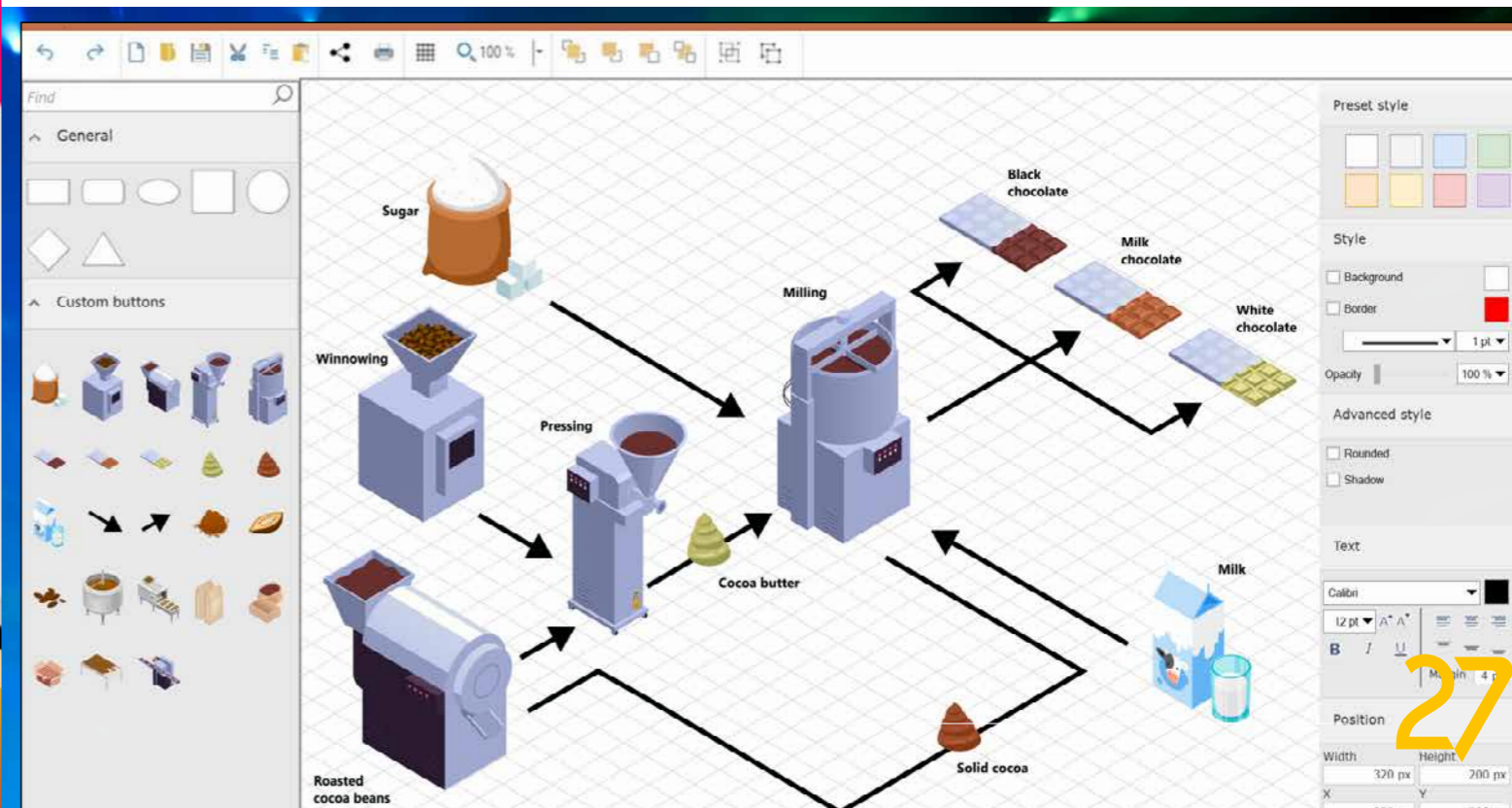
001 New feature WD WB WM NEW DIAGRAM : EDITOR CONTROL

The new Diagram Editor control really stands out among the main new features in version 27. This control allows you to include superb diagram creation and editing functionalities in your applications and sites without writing a single line of code: all these functionalities have been automated into one control.

Benefit provided by this new feature of version 27:
an incredible feature-rich control

002 New feature WD WB WM WHAT IS A DIAGRAM?

A diagram is a "graphic representation of parts of a whole and their position in relation to each other". A diagram can be used to represent structures, architec-



tures, material infrastructure, plans, processes, mechanisms, unconventional flowcharts,...

(see new feature 003)
Benefit provided by this new feature of version 27:
Diagrams in your applications and sites

003 New feature WD WB WM **DIAGRAM EDITOR CONTROL: MAIN FEATURES**

The Diagram Editor control includes rich, essential features:

- preset shapes
- custom shapes and images
- image resizing
- shape style: line, color,...
- advanced connectors between shapes
- text input
- ...

All these features, accessible to the end users of your applications and sites, are also available through programming.

Benefit provided by this new feature of version 27:
A control accessible to both users and developers

004 New feature WD WB WM **DIAGRAM EDITOR CONTROL: PRESET (VECTOR) SHAPES**

Preset shapes are the "base" of a diagram editor.

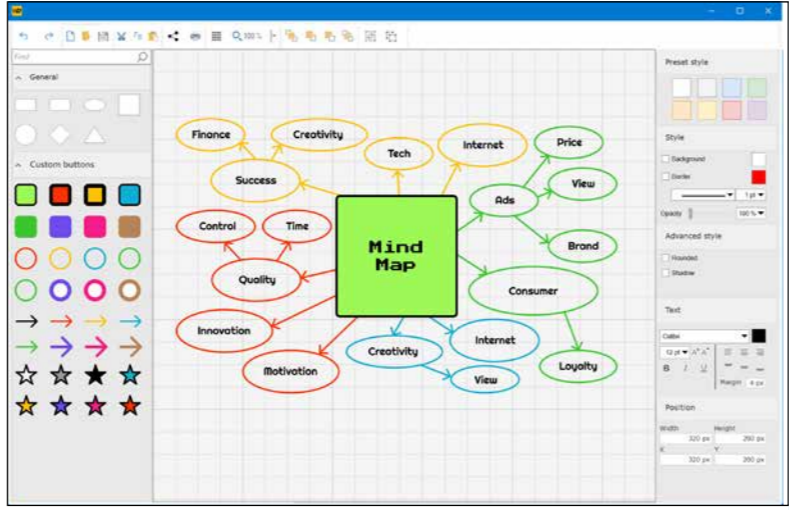
The Diagram Editor control includes a set of preset shapes:

- square
- rectangle
- triangle
- polygon
- diamond
- parallelogram
- circle, ellipse
- arrow
- barrel
- person
- star
- leaf
- window
- ...

The clipart provided with WINDEV and WEBDEV includes thousands of SVG images that can be used as "shapes" in the Diagram Editor control.

The Diagram Editor also allows you to create your own shapes (see new features 007 and 018).

Benefit provided by this new feature of version 27:
Use any shape you want



005 New feature WD WB WM **DIAGRAM EDITOR CONTROL: CONNECTORS**

The connectors between shapes are an essential feature of a diagram editor: users should be able to create their own connectors, and these connectors should automatically adapt to any shape in any position.

The Diagram Editor control connectors in version 27 include:

- 2D or 3D aspect
- line style: thickness, type, color
- shape on each end
- straight or elbow connector
- connector with sharp angles
- connection point
- ...

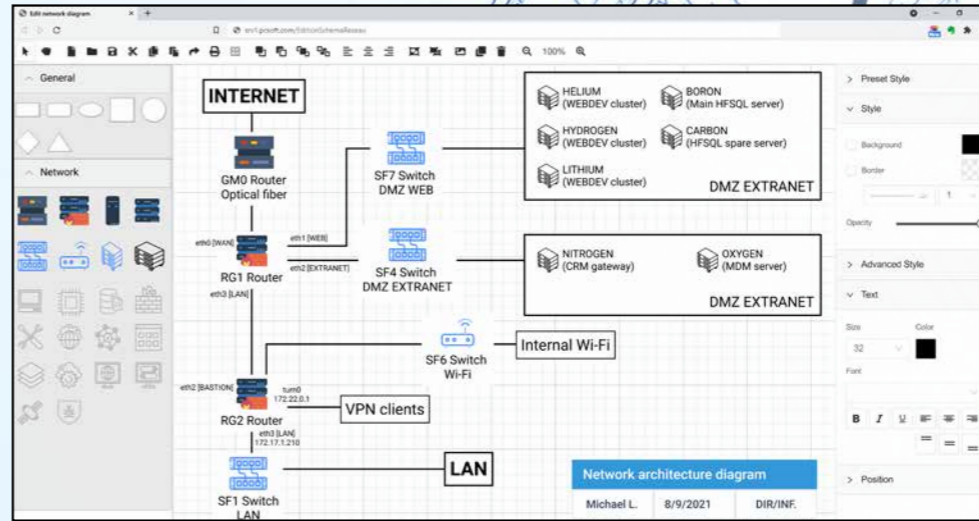
Benefit provided by this new feature of version 27:
Perfect connectors

006 New feature WD WB WM **DIAGRAM EDITOR CONTROL: TEXT**

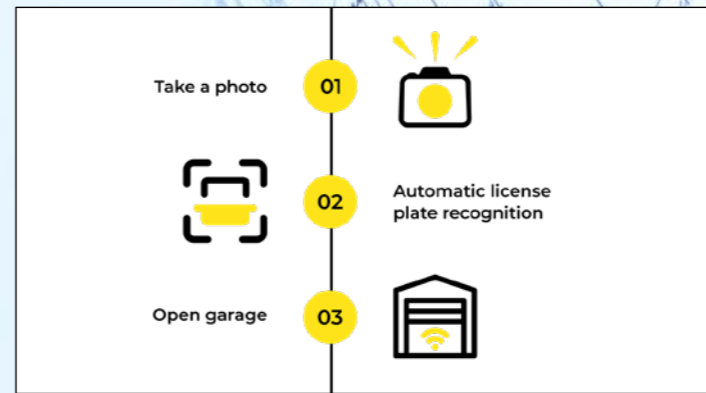
The Diagram Editor control allows entering text directly at the cursor position.

All the standard text formatting functionalities are included: font, size, color, alignment, opacity, in-place editing,...

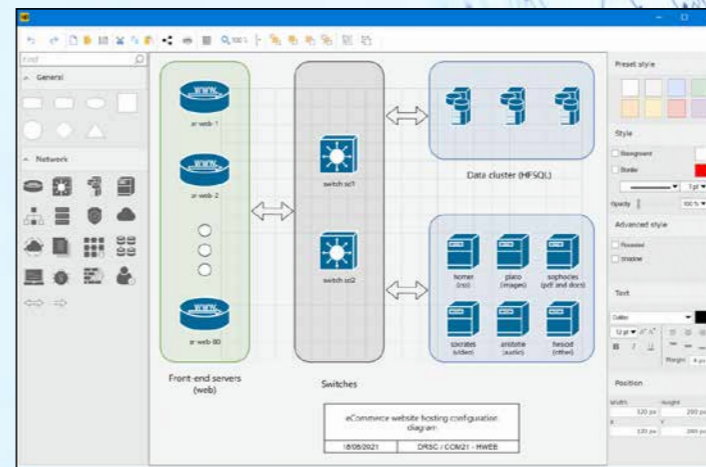
Benefit provided by this new feature of version 27:
Perfect texts



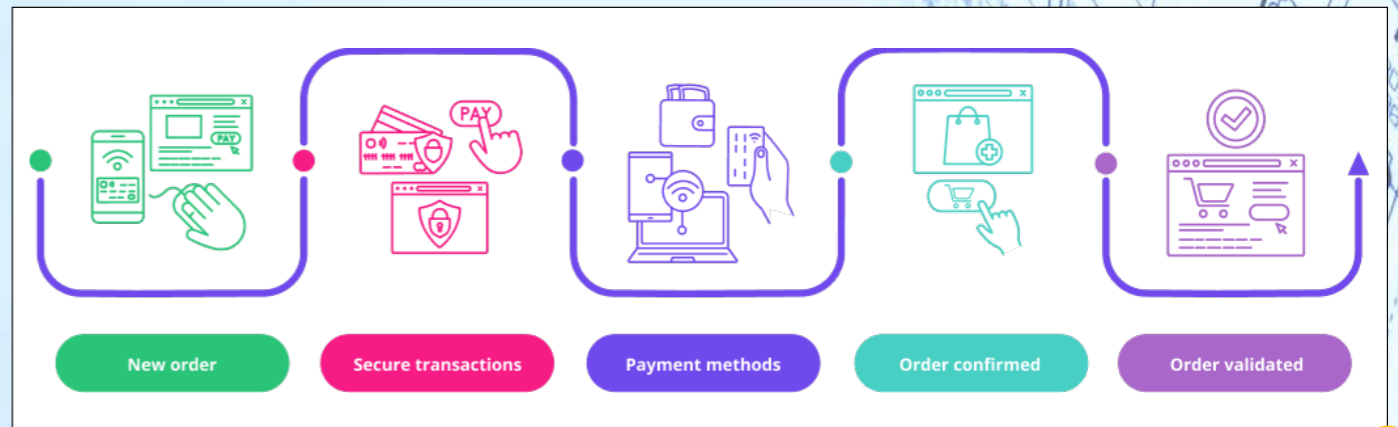
Infrastructure diagram in edit mode (Web)



Step-by-step diagram



Infrastructure diagram in edit mode (Windows)



Sequence diagram

**DIAGRAM
 EDITOR
 CONTROL:
 A TRUE FULLY-
 FLEDGED
 PROGRAM**

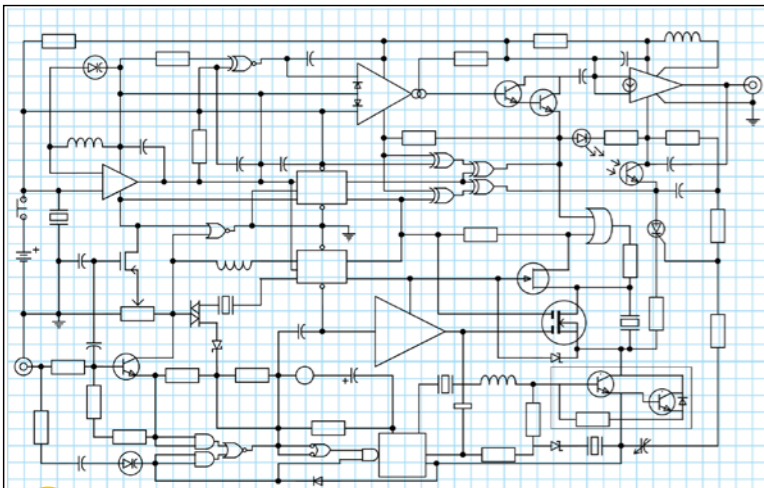
CONTROL

The Diagram Editor control is equivalent to a full program: it allows you to create diagrams without writing one line of code. End users of your application or site can create, edit, save and print their own diagrams. The control takes care of everything.

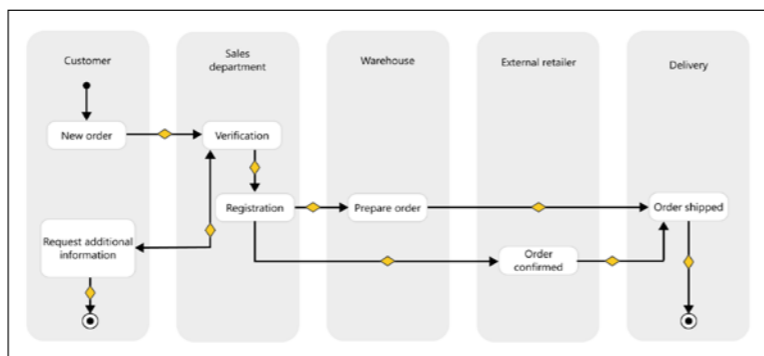
All types of diagrams are supported: logical diagram, flowchart, workflow, plan, IT infrastructure, process, vector graphics, electronic schematic diagram, mind map, ...

PROGRAMMING

The Diagram Editor control can also be handled through programming. Your application or site can create diagrams, and can edit or complement a diagram made by a user.



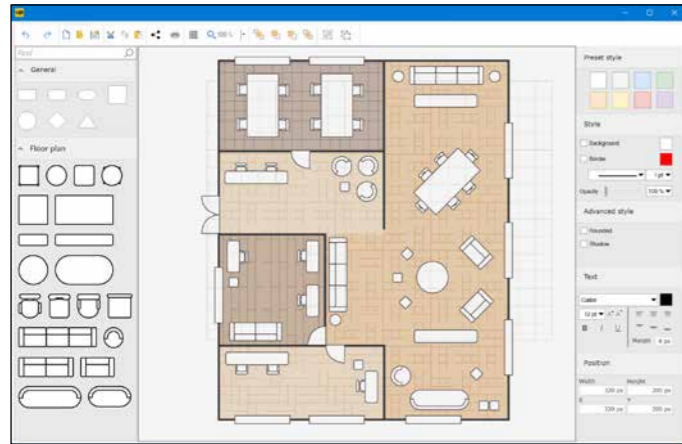
Electronic schematic diagram



Workflow diagram

007 New feature WD WB WM
**DIAGRAM EDITOR CONTROL:
 END USERS CAN ADD THEIR OWN
 PRESET VECTOR SHAPES**

The Diagram Editor control allows users to create their own preset shapes and import existing ones. SVG shapes are supported, as well as PNG or JPEG images and photos. It is easy to create libraries of shapes related to a professional field, furniture of a given brand, items available in a store, etc. End users can create these elements or find them in your application.



Benefit provided by this new feature of version 27:
Floor plan Diagram

Customize your editor

008 New feature WD WB WM
**DIAGRAM EDITOR CONTROL:
 A CODE-FRIENDLY CONTROL**

The Diagram Editor control allows end users to create, edit, export and print their own diagrams. The Diagram Editor control also allows creating, editing, using and positioning shapes, connectors and text through programming. The content of a diagram created by an end user can also be manipulated through programming. This opens a wide range of possibilities. See new features 013 to 020

Benefit provided by this new feature of version 27:
Program exactly what you want

009 New feature WD WB WM
**DIAGRAM EDITOR CONTROL:
 EXPORT TO SVG AND PNG**

Diagrams can be exported as SVG or PNG images, using the toolbar.

Benefit provided by this new feature of version 27:
Easily export your diagrams

010 New feature WD WB WM
**DIAGRAM EDITOR CONTROL:
 PRINT**

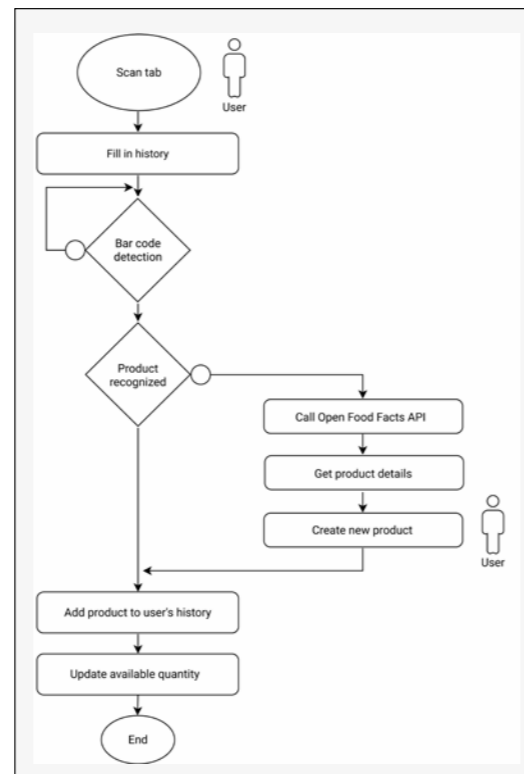
Diagrams can be printed via the toolbar or through programming. The selected paper size is represented by a dotted line in the diagram editor, which allows you to position the shapes according to the type of print job.

Benefit provided by this new feature of version 27:
Easily print your diagrams

011 New feature WD WB WM
**DIAGRAM EDITOR CONTROL:
 MISCELLANEOUS**

- WEBDEV and WINDEV use the same diagram format
- A diagram can be saved in an HFSQL Memo item, which allows binding the diagram to a data source.

Benefit provided by this new feature of version 27:
Interoperability



Standard organization chart

DIAGRAM EDITOR CONTROL GENERAL OVERVIEW

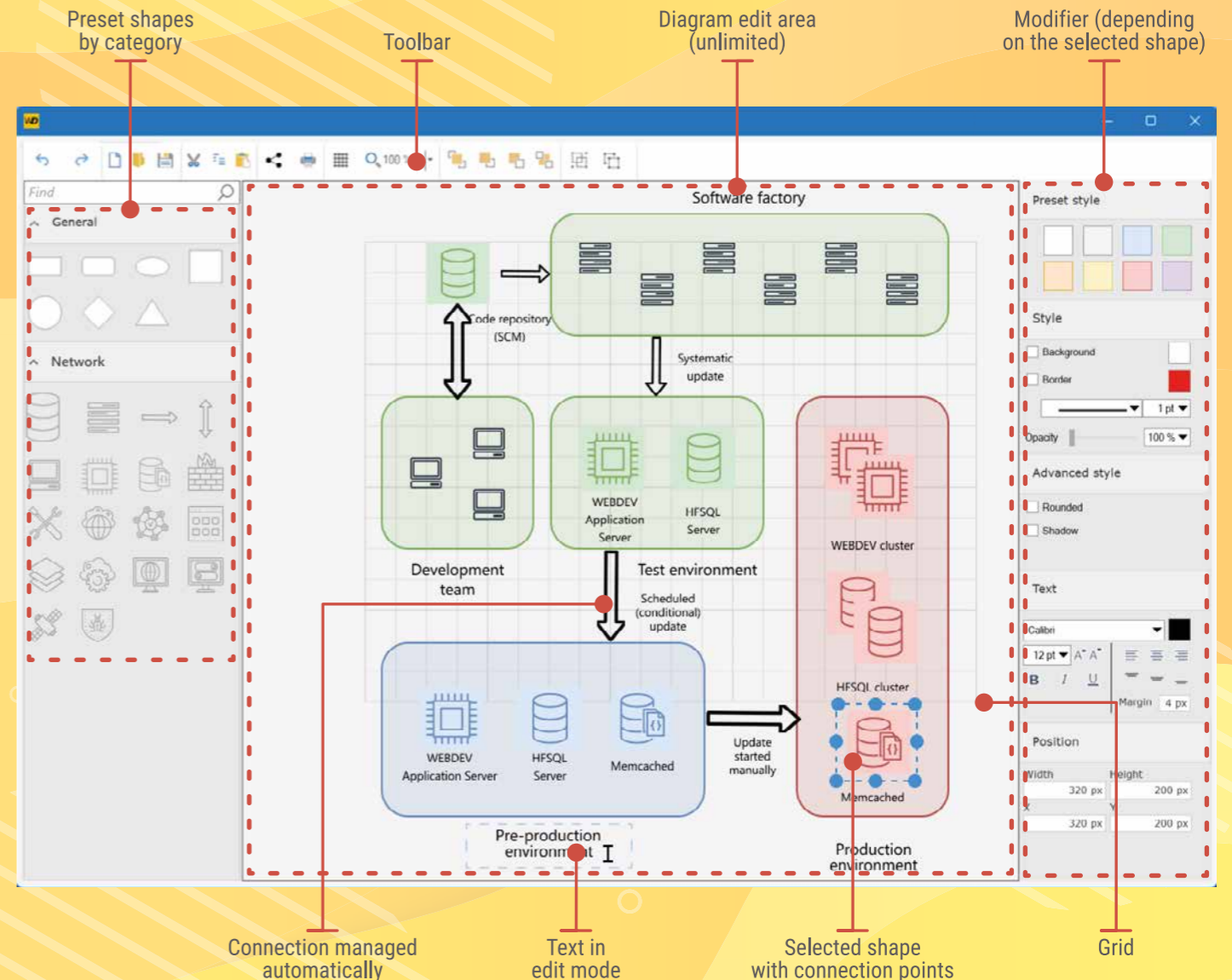
012 New feature WD WB WM
**GENERAL OVERVIEW OF THE
 DIAGRAM EDITOR CONTROL**

The Diagram Editor control has 4 main areas. By default:

- left: library of preset shapes
- top: toolbar
- right: modifier, to edit the selected shape

- center: diagram. The control is very easy to use. You can hide one or multiple areas, customize the toolbar, load preset shapes and more, programmatically, or via the 7-tab window,...

Benefit provided by this new feature of version 27:
An actual diagram editor!



The Diagram Editor control requires zero code. However, according to your needs, you can access all the functionalities of the editor through programming (see following pages).



GENERATE DIAGRAMS PROGRAMMATICALLY

013 New feature WD WB WM DIAGRAM EDITOR CONTROL PROGRAMMING: ARRAY OF SHAPES

In the code, the diagram is an array of shapes. This array of shapes contains all the shapes and images of the diagram. Each shape includes its coordinates and properties. This makes it easy to edit a diagram, add shapes and images through programming. All the functionalities of the Diagram Editor control are accessible in the code.

To add a shape to a diagram programmatically, simply add it to the array of shapes: the control will automatically display the shapes.

Of course, you can edit or delete a shape. (see examples of code in new feature 020)

Benefit provided by this new feature of version 27:
A structure adapted to the programming of diagrams

014 New feature WD WB WM NATIVE TYPES TO HANDLE SHAPES

Version 27 includes the necessary WLanguage types to easily program the processes you want.

The **Diagram** native type allows you to handle the whole document.

The Diagram has many properties:

- dimension
- background color
- grid
- page layout
- zoom
- ...

The native **Shape** type allows you to handle all the shapes with its numerous properties: X, Y, width, height, text, background color, opacity, shadow, array of links,...

Other native types derive from the Shape type:

- **Rectangle**
- **Triangle**
- **Circle**
- **Polygon**
- **Image**
- **Link**
- **Shape that contains shapes**
- ...

All these types inherit the properties of the Shape type and have specific properties: radius,....

Benefit provided by this new feature of version 27:
Types that make programming easier

015 New feature WD WB WM DIAGRAM EDITOR CONTROL: NEW WLANGUAGE FUNCTIONS

New WLanguage functions now allow you to create and handle diagrams by programming:
DiagramLoad, DiagramSave, DiagramToImage, DiagramTo-SVG, iPrintDiagram...

Benefit provided by this new feature of version 27:
WLanguage evolves

016 New feature WD WB WM DIAGRAM EDITOR CONTROL: NEW PROPERTIES

New WLanguage properties are also introduced to define and configure diagrams programmatically:
Zoom, Gridlines, Show/Hide library, modifier and ribbon, paper format...

Benefit provided by this new feature of version 27:
Fine-tuning through programming

017 New feature WD WB WM DIAGRAM EDITOR CONTROL: NEW PROCESSES

New events are introduced to manipulate diagrams programmatically.

They are added to existing events.

- **Click in the diagram**

In this event, you can write the code to create a shape at the click location.

- **Create a shape**

This event allows you to be notified when the user creates a shape.

- **Select a shape**

This event allows you to be notified when the user selects a shape.

- **Change shape**

This event allows you to be notified when the user changes a shape.

- **Right button**

This event allows you to be notified when the user presses the right mouse button. It can be used to open a custom context menu, for example.

- **Move a shape (Drag and Drop)**

This event allows you to be notified when the user moves a shape.

Benefit provided by this new feature of version 27:
Easily write code in each event

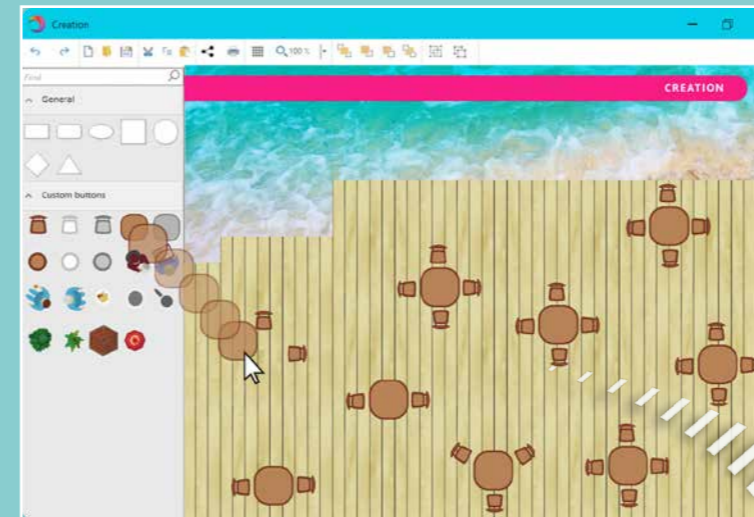


CHART CONTROL: PROGRAMMING

Example of a "mixed" diagram: the diagram is created by the end user, then completed by the code. The head waiter of a restaurant drags and drops the tables in the diagram, according to their actual position. The application displays the status of the reservation above each table in real time.

018 New feature WD WB WM ADD PRESET VECTOR SHAPES: THROUGH PROGRAMMING

Developers can programmatically add their own preset shapes and images to the library of preset shapes included in the control: shapes related to a professional field, shapes of a given brand, ...

Benefit provided by this new feature of version 27:
Stay in shape

019 New feature WD WB WM DISPLAY-ONLY MODE, STILL INTERACTIVE

A "display-only" mode allows you to display diagrams without pane or toolbar.

Shapes can no longer be moved or resized.

However, click events remain enabled, which allows to you program processes according to the user's clicks.

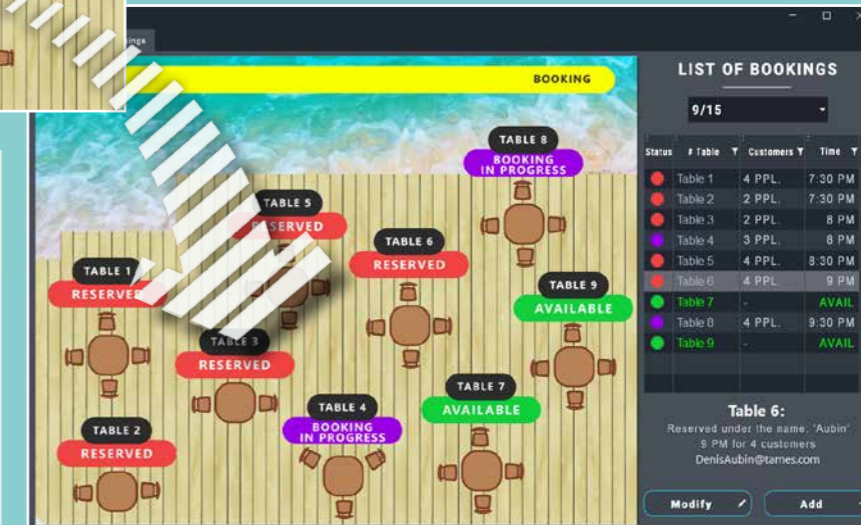
Benefit provided by this new feature of version 27:
Click and Do

020 New feature WD WB WM CODE EXAMPLES

Version 27 enables you to do more through programming. Here are some examples of code:

- Create a rectangle in a diagram

```
MyDiagram is Diagram
rect is diagRectangle
MyDiagram.Shape.Add(rect)
```



- Connect two objects with a line

```
MyDiagram is Diagram
objShape1 is diagShape <- MyDiagram.Shape[1]
objShape2 is diagShape <- MyDiagram.Shape[2]
MyLink is diagLink
MyLink.AttachPointStart= objShape1.ConnectionPoint[1]
MyLink.AttachPointEnd = objShape2.ConnectionPoint[3]
MyLink.Line.Color = Black
MyDiagram.Shape.Add(MyLink)
```

- Add an image

```
MyDiagram is Diagram
LogoImage is diagImage
LogoImage.Image = "c:\temp\logo.svg"
LogoImage.X = 10
LogoImage.Y = 150
LogoImage.Width = 64
LogoImage.Height = 64
MyDiagram.Shape.Add(LogoImage)
```

- Print a diagram

```
iPrintDiagram(MyDiagram)
```

Benefit provided by this new feature of version 27:
Write and maintain code with ease



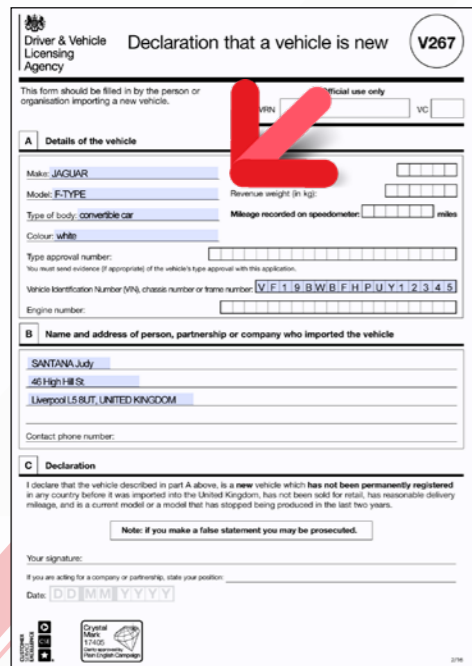
PDF READER CONTROL: NEW FEATURES

PDF CONTROL: NEW FEATURES

NEW FEATURES OF PDF CONTROLS

021 New feature WD WB WM PDF READER CONTROL: FILL OUT FORMS, SAVE, PRINT

Highly anticipated new feature for the PDF Reader control in version 27: ability to fill out a form. The completed form can then be printed and/or saved. End users can directly fill out the form.



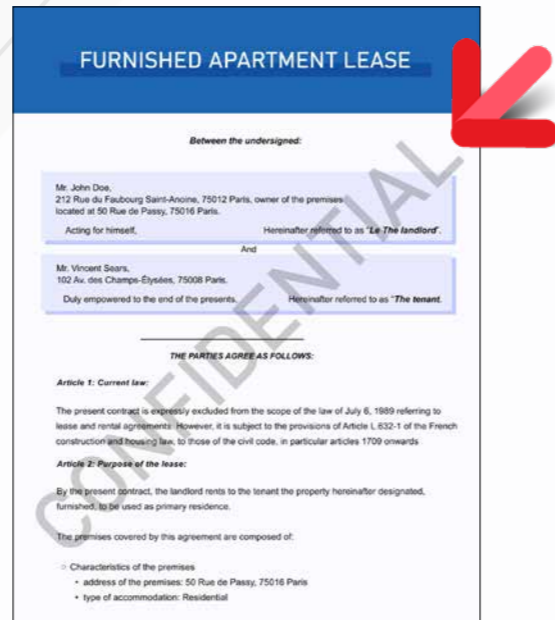
PDF form to fill out

Benefit provided by this new feature of version 27: Input in PDF documents

022 New feature WD WB WM PDF READER CONTROL: WATERMARK ADDED BY END USER

In previous versions, it was already possible to insert a watermark on one or more pages of an existing PDF through programming or in the print preview.

In the PDF Reader control in version 27, end users can insert a watermark, choose the text and set the text position, angle, font, size, color and opacity.



"Confidential" watermark added by the user

Watermarks can also be added programmatically. Benefit provided by this new feature of version 27: Greater PDF customization

023 New feature WD WB WM PDF READER CONTROL: END USER DIGITAL SIGNATURE

The PDFSign WLanguage function already allows signing documents programmatically. In version 27, end users can sign PDF documents in the PDF Reader control.

The signature option can be found in the ribbon. End users must simply select the desired certificate.

Benefit provided by this new feature of version 27: End user digital signature

024 New feature WD WB WM PDF READER CONTROL: MULTIPLE DIGITAL SIGNATURES WITH MULTIPLE CERTIFICATES

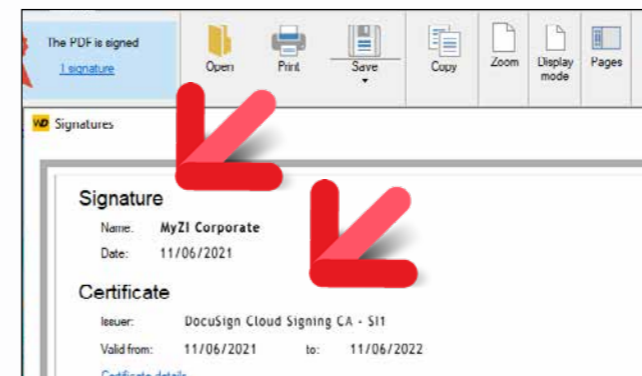
In version 27, end users can also add their digital signatures to a PDF document that has been previously signed.

You can also use multiple signatures on PDF documents programmatically.

Benefit provided by this new feature of version 27: Multiple signatures

025 New feature WD WB WM PDF READER CONTROL: SIGNED PDF? WHICH CERTIFICATE WAS USED?

In version 27, a banner indicates if a PDF file is signed, and also indicates the number of signatures. By clicking on this banner, end users can view the signature details.



Clear information

You can also determine if a PDF document is signed, and identify the certificate used, programmatically.

Benefit provided by this new feature of version 27: Users can view signatures and certificates

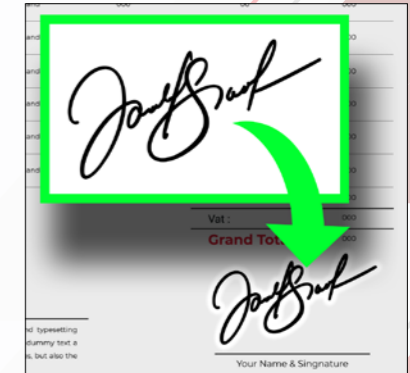
026 New feature WD WB WM PDF READER CONTROL: HANDWRITTEN SIGNATURE, HANDWRITTEN INITIALS

The PDF Reader control in version 27 offers end users numerous options for handwritten signatures:

- draw signature with the mouse
- keyboard input with a cursive font
- image from the clipboard
- image from disk
- ...

Signatures can be resized and moved with the mouse. You can set an image and a position for the initials on each page.

The signed document can be saved, printed, sent by email...

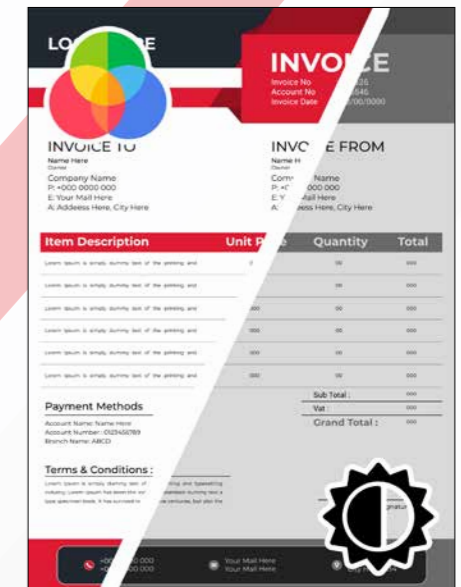


Handwritten signature in the PDF document

Benefit provided by this new feature of version 27: Handwritten signature support

027 New feature WD WB WM GENERATE BLACK & WHITE PDF DOCUMENTS

Besides the PDF Reader control, the new Grayscale and BlackAndWhite options of the iParameterPDF function allow you to generate a black and white or grayscale PDF documents.



End users with a black & white printer can view the result before printing

Benefit provided by this new feature of version 27: Black & white print preview

028 New feature WD WB WM PDF 1.7

In version 27, you can generate files in PDF 1.7 (ISO 32000).

Benefit provided by this new feature of version 27: Additional customization

Reminder: some organizations require black & white PDFs

13 NEW SMART CONTROLS

Version 27 features 13 new Smart controls:

- Tokenized email address input with autocomplete
- Form with non-blocking required input
- Drag & Drop rows in a Looper control
- WEBDEV PDF reader
- WEBDEV timeline
- Editable combo box
- Popup side panel
- Tokens as filters, with horizontal scrolling
- ...

Find these Smart controls in their corresponding sections: new features 172 to 175 for WINDEV 27, 594 to 609 for WINDEV Mobile 27, and 763 to 775 for WEBDEV 27.



WORD PROCESSING AND SPREADSHEET CONTROLS: NEW FEATURES

029 New feature WD WB WM WP CONTROL: LINK TO EXTERNAL IMAGES, REDUCE DOCUMENT SIZE

The Word Processing (WP) control now allows you to insert links to external images. This avoids inserting the image itself, thus reducing the size of the document. The image stored at the corresponding address is displayed in a preview resolution in the WP document, and is printed in its actual resolution.

Benefit provided by this new feature of version 27:
Smaller documents with images

030 New feature WD WB WM WP CONTROL: AUTOMATICALLY DETECT HTTP LINKS AND MAKE THEM CLICKABLE

In version 27, URLs in a text are automatically converted into clickable links.

Benefit provided by this new feature of version 27:
Automatic links

031 New feature WD WB WM SPREADSHEET CONTROL: OPEN XLTS AND XLTM FILES

XLTS and XLTM files are spreadsheet templates. When an end user opens this type of file, a new workbook is automatically created.

Benefit provided by this new feature of version 27:
New format supported

032 New feature WD WB WM SPREADSHEET CONTROL: WORKSHEET PROTECTION KEPT AUTOMATICALLY

In an XLSX file, sheets can be protected to prevent users from making changes. These sheets are displayed, but cannot be modified.

A password is required to make any changes. Version 27 supports this type of protection.

Benefit provided by this new feature of version 27:
Protection against changes

033 New feature WD WB WM SPREADSHEET CONTROL: MISCELLANEOUS

- The Excel **INDEX** function is available

Benefit provided by this new feature of version 27:
Fine processing

NEW CHART CONTROL

034 New feature WD WB WM NEW FEATURE IN CHART CONTROLS: RADIAL BAR CHART

A new type of chart is introduced in version 27: the Radial Bar chart.

This type of chart is mainly used to compare objectives or market shares, or to illustrate a progress percentage (the full circle represents 100%).



A Radial Bar chart

Benefit provided by this new feature of version 27:
A new type of chart

035 New feature WD WB WM NEW CHART CONTROL: RADIAL BAR CHART PROGRAMMING

The Radial Bar chart control can be populated through programming just like any other chart control. You can manipulate this type of chart using **grRBxxx** functions.

Benefit provided by this new feature of version 27:
Familiar coding

EDIT YOUR WEBDEV SITES AND YOUR MOBILE APPS IN WINDEV

036 WD WB WM NO NEED TO DUPLICATE YOUR PROJECTS: ONE SINGLE ENVIRONMENT

As you know, it is possible to use WINDEV, WEBDEV and WINDEV Mobile in the same environment. Project elements are immediately shared between all 3 platforms: analyses, queries, reports, procedures, classes, code, ... **Windows, pages and mobile windows** are in the same project. These elements **are opened directly in the WINDEV environment**.

This allows for easy maintenance and portability of a WINDEV

application to mobile and Web, without having to import or duplicate elements of the project.
Reminder: you need a license of the corresponding software products.

Benefit provided by this new feature of version 27:
One for all, all for WINDEV

037 New feature WD WB WM CROSS-PLATFORM COMPONENTS

In version 27, you can create cross-platform components for Windows, Linux, Web, iOS and Android. This makes code sharing even easier.

Benefit provided by this new feature of version 27:
Even better portability

038 New feature WD WB WM IMPROVED <BLOCK> AND <COMPILE IF> STATEMENTS

In version 27, the **<BLOCK>** and **<COMPILE IF>** statements can be used in the declaration of a constant.

Benefit provided by this new feature of version 27:
Specific code compiled according to the platform

TRANSFORM WINDEV APPLICATIONS INTO WEBSITES OR SAAS



039 New feature WD WB WM YOUR EXISTING WINDEV PROJECTS CAN BECOME WEBSITES OR SAAS APPLICATIONS

Developers often need to transform Windows applications (or parts of applications) into dynamic websites or SaaS applications. WINDEV and WEBDEV 27 are ideal tools for this purpose.

Benefit provided by this new feature of version 27:

You can't go wrong

DATA MODEL EDITOR DATA SCHEMA

040 New feature WD WB WM IMPORT .FIC FILES

When a standard .FIC data file is dragged and dropped into the data model editor, its description is automatically imported without opening the import wizard.

Benefit provided by this new feature of version 27:
Less clicks

041 New feature WD WB WM EDIT DATA FILE CONNECTIONS

The context menu now includes an option to edit the connections of one or multiple data files:

Benefit provided by this new feature of version 27:
Less actions

ENVIRONMENT

042 New feature WD WB WM FASTER ENVIRONMENT

The performance of the environment has improved in version 27 in many areas, such as:

- Template updates (see new feature 204).
- Multi-core compilation, which optimizes the number of cores used (see new feature 105).
- Compilation after SCM updates (see new feature 798).
- Generation of WEBDEV pages (see new feature 795).
- ...

Benefit provided by this new feature of version 27:
Faster is always better

043 New feature WD WB WM STORE PROJECTS IN A SINGLE DIRECTORY

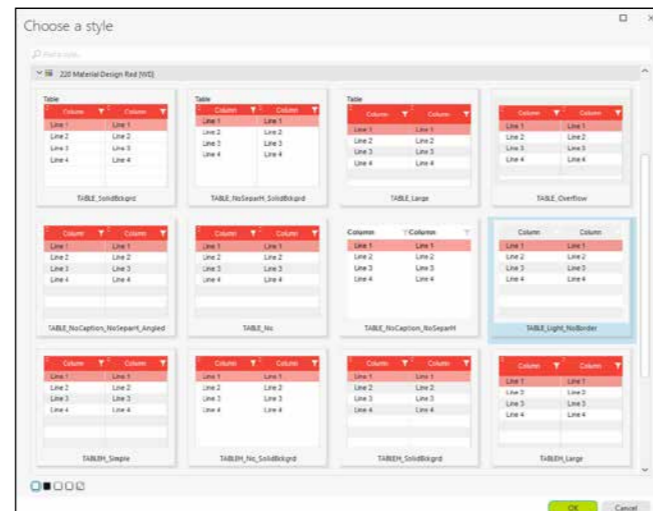
Until now, WINDEV, WINDEV Mobile and WEBDEV projects were saved in the **My Projects**, **My Mobile Projects** and **My Sites** directories, respectively. To improve interoperability, in version 27, projects are stored by default in a single directory: **My Projects**. When you install version 27, you will be prompted to store

your existing projects in this unique directory. Duplicate project names are managed by default.

Benefit provided by this new feature of version 27:
Share your projects more easily

044 New feature WD WB WM BETTER STYLE SELECTION UI

The new style selection window is much more user-friendly.



The different options are clearly represented

The new layout makes it easier to find a style, for example. The size of the style preview adapts to the type of control. Also, the preview background color adapts to the current window (dark or light theme). A context menu shows quick actions. All style sheets are presented in a single window, which makes selection easier. An icon is shown next to overridden styles.

Benefit provided by this new feature of version 27:
Select styles with ease

045 New feature WD WB WM DON'T LOOK ANY FURTHER FOR CODE: CODE TREEVIEW FOR WINDOWS, PAGES AND REPORTS

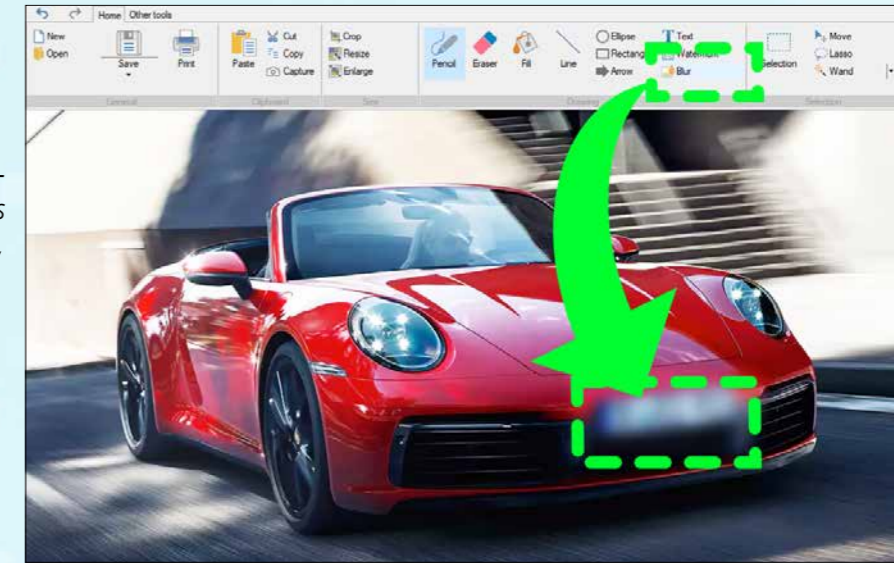
Version 27 includes a new pane to view all the elements of a window, page or report that contain code. This allows you to see at a glance where the code is in a given element.

This tree appears in a new pane in the environment. **Benefit provided by this new feature of version 27:**
All the practicality of a treeview

Continues page 16...

IMAGE EDITOR CONTROL: NEW FEATURES

The Image Editor control allows you to include a full-blown image editor in your applications. End users can edit images and photos directly in your applications, without having to install and use third-party tools.



046 New feature WD WB WM IMAGE EDITOR CONTROL: BLUR AN AREA

A new feature in the Image Editor control allows end users to easily blur an area of the image.

Benefit provided by this new feature of version 27:
Hide confidential information

048 New feature WD WB WM BLUR PROGRAMMING

You can blur part of an image or Image control programmatically.

To blur a control, simply use the new `dbBlur` WLanguage function, passing the name of the control and the percentage of blur as parameters.

To blur an area, simply pass the coordinates of the area as parameters.

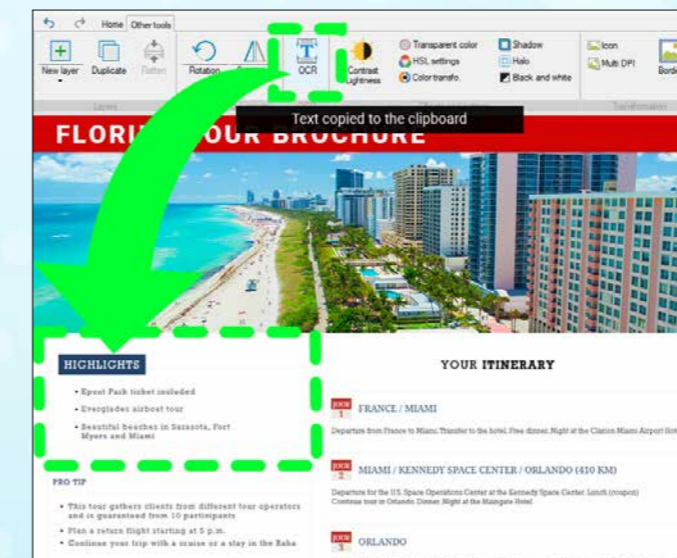
Benefit provided by this new feature of version 27:
Blur only what you need

047 New feature WD WB WM OCR ON AN IMAGE AREA: NO PROGRAMMING REQUIRED

In version 27, the Image Editor control allows end users to define an area on an image and run OCR to retrieve the text from that area.

This makes it possible, for example, to automatically retrieve a delivery or billing address, the contents of an order, etc...

In version 27, OCR processing requires zero code.



The user selects the area, and voilto, OCR does its magic!

Benefit provided by this new feature of version 27:
Zero code required

049 New feature WD WB WM IMAGE EDITOR OPENING SETTINGS

The tool selected by default when the image is opened can be defined programmatically.

The default size of an image created in the Image Editor can be set programmatically.

Benefit provided by this new feature of version 27:
More possibilities

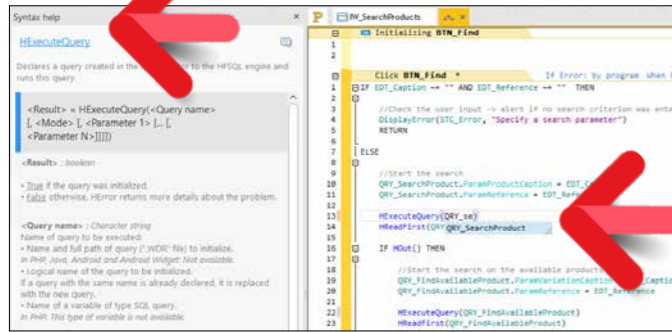
050 New feature WD WB WM REMINDER: ALL THE FUNCTIONALITIES FROM THE IMAGE EDITOR CONTROL ARE AVAILABLE IN THE IMAGE EDITOR ITSELF

Developers have an image editor at their disposal in the environment. You are probably familiar with this tool. The Image Editor control includes all the features of this image editor.

Developers benefit from all these features.

Benefit provided by this new feature of version 27:
An image editor within the environment

051 New feature WD WB WM INTEGRATED HELP: NEW PANE WITH HELP FOR THE CURRENT FUNCTION



Here, the developer can immediately see the function parameters...

In version 27, the environment includes a practical help pane: this pane shows a summary of the function, the return value, the parameters, their type and purpose, as well as a link to the full help page and the professional forum. You no longer need to leave the editor to access this essential information!

Benefit provided by this new feature of version 27:
The essentials at a glance

052 New feature WD WB WM ALIGNMENT: ADDITIONAL CONTROLS SUPPORTED

The alignment of elements in a window keeps evolving in version 27:

- It is now possible to align controls from a template.
- You can align control using a column of a Table control as a reference.
- Non-movable controls are ignored.

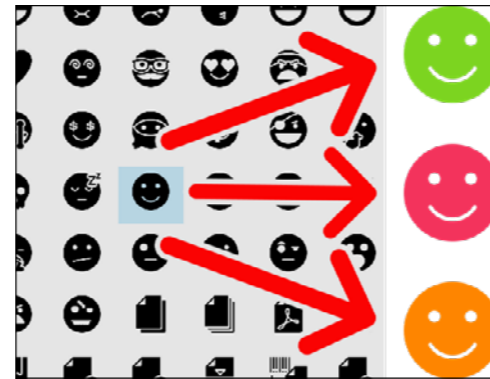
Benefit provided by this new feature of version 27:
Perfect alignment

053 New feature WD WB WM ELEMENTS IN EDIT MODE: THEY CAN BE UNDOCKED (OUT OF THE ENVIRONMENT)

Elements in edit mode can be undocked and positioned outside the environment. When the element is moved back into the environment, the areas where it can be re-docked are highlighted. In version 27, holding down the **Ctrl** key allows you freely position this element. Make sure you try this practical feature!

Benefit provided by this new feature of version 27:
A fully customizable environment

054 New feature WD WB WM IMAGE CATALOG: NOW WITH COLOR!



Modern, fashionable icons

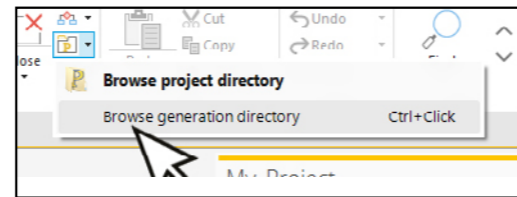
Your favorite environment comes with a rich catalog of images and icons: tens of thousands of elements available at no extra cost!

Many images and icons come in black & white. In version 27, a new option allows you to apply color to these elements.

Benefit provided by this new feature of version 27:
More colors, more possibilities

055 New feature WD WB WM EDITOR RIBBON: OPEN THE RIGHT DIRECTORY WITH A SINGLE CLICK

Very often, developers need to open a file explorer directly on the project directory or the EXE (or generation) directory of the current configuration. The "Folder" button in the ribbon allows you to do so with a single click!



Benefit provided by this new feature of version 27:
Fewer operations

056 New feature WD WB WM MOVE CONTROLS IN INCREMENTS USING THE KEYBOARD

You can move a control by a precise number of pixels, using the status bar in the environment: it is now possible to type "+10" or "-5" to move the control along the X or Y-axis.



Number of pixels directly specified

Benefit provided by this new feature of version 27:
Keyboard precision

057 New feature WD WB WM MISCELLANEOUS

- Edit Calendar control styles more easily
- Faster zoom (CTRL+ mouse wheel)
- The image catalog is enriched with Windows 11-style icons

Benefit provided by this new feature of version 27:
Practicality

STATIC AUDIT OF YOUR CODE

058 New feature WD WB WM TABLE CONTROL: SEARCH SCOPE

Table controls columns have a search Automatic Application Feature.

Starting with version 26, Table controls use a "Contains" search mode by default.

Older tables used a "Starts with" search, which was not as practical.

The static audit in version 27 identifies the old search modes. It takes only 2 clicks to use the new search mode.

Benefit provided by this new feature of version 27:
Search, find

DYNAMIC AUDIT OF YOUR CODE

059 New feature WD WB WM MULTITHREAD

In a multithread process, access to variables must be protected by critical sections.

The dynamic audit identifies accesses to unprotected variables, thus preventing bugs and unexpected behavior.

Benefit provided by this new feature of version 27:
Security of your applications

060 New feature WD WB WM TEXT OVERFLOW: TABLE COLUMN, EDIT CONTROL, RADIO BUTTON OPTION...

At runtime, the content of a control may overflow the view area.

It can be data displayed or the text of a control modified programmatically

The dynamic audit in version 27 reports all overflows detected at runtime.

Benefit provided by this new feature of version 27:
No overflows



COMPATIBLE WITH PREVIOUS VERSIONS

WINDEV 27 supports your existing projects.

No migration required between WINDEV 7.5 - 26 and WINDEV 27: Simply recompile the application and it will run in version 27.

Switching from an earlier version of WEBDEV to WEBDEV 27 is also easy. The same applies to WINDEV Mobile.

Existing components (version 8 to 26) work directly without having to be recompiled with applications in version 27.

Version 27 directly opens projects in version 7.5 to 26.

You can have different versions of your environments on your PC. With a license for version 27, you can also launch versions 5.5 to 26.

the future is
written in

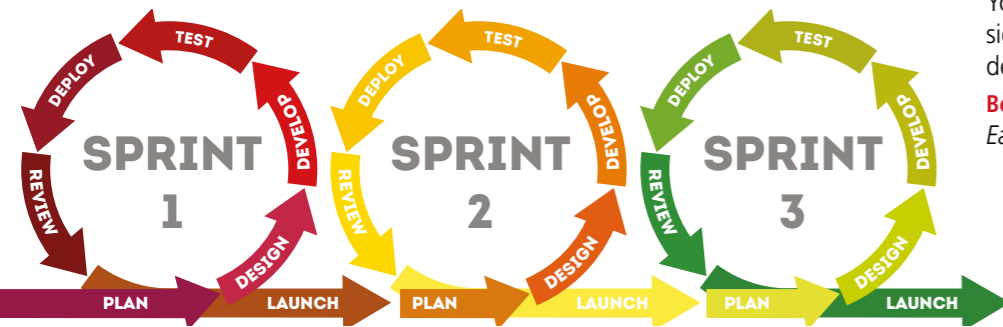
27



PROJECT MONITORING CENTER

Less actions required

061 New feature WD WB WM SPRINT MANAGEMENT



A sprint or iteration is a development cycle. In agile development, a project is divided into a set of sprints. The Project Monitoring Center now integrates this method. A sprint has a start and end date, and can contain requirements, tasks and incidents. The different sprints are clearly represented. A schedule with a Gantt chart layout shows the selected sprints.

Benefit provided by this new feature of version 27:
Agile development

062 New feature WD WB WM FIX TRACKING: ISSUES FIXED BY A DEVELOPER BETWEEN 2 DATES

New statistic available: the number of tickets fixed by a developer between 2 dates. A new chart shows the trend of new and fixed issues. Of course, you can directly open each ticket from this list.

Benefit provided by this new feature of version 27:

063 New feature WD WB WM MESSAGES RELATED TO A REQUIREMENT/INCIDENT

A requirement can be created from a message in the integrated messaging system. You can now follow and continue the discussion thread related to that requirement/incident.

Benefit provided by this new feature of version 27:
Easier, more intuitive process

064 New feature WD WB WM EVOLUTION OF TAGS

Tags are used to classify incidents. One or more tags can be associated with a ticket: "Minor bug", "Regression", "UI",... Tickets that don't have any tags are identified as "No tag", which makes it possible to find and classify them.

Benefit provided by this new feature of version 27:
A more comprehensive classification

065 New feature WD WB WM MISCELLANEOUS

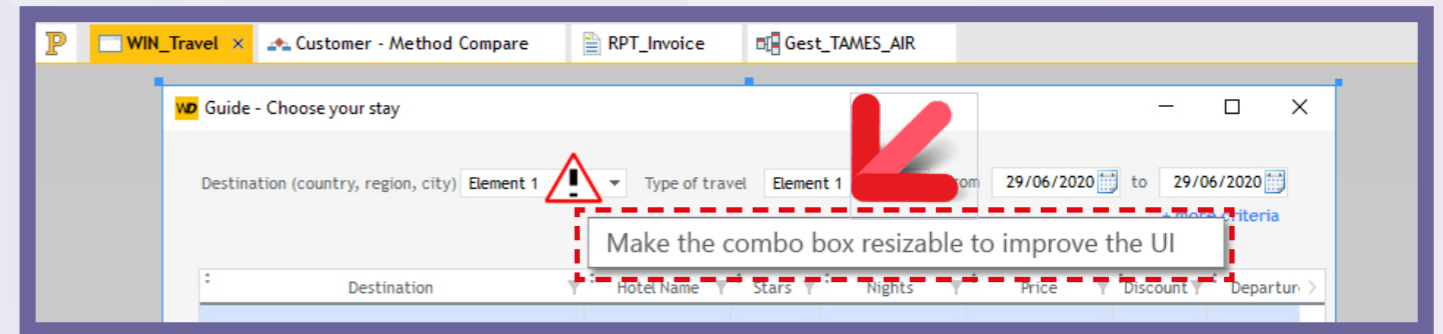
- New incident management options have been introduced (ability to specify workarounds, multiple screenshots, new incident states, etc.)
- The window interface is more intuitive.

Benefit provided by this new feature of version 27:
More is better

Continues page 20...

PROJECTS SLOWED DOWN BY DEPRECATED FEATURES

DETECT AND FIX THEM IN THE ENVIRONMENT



066 New feature WD WB WM POTENTIAL IMPROVEMENTS

In version 27, when the automatic UI audit detects a control or parameter that can be improved, an icon appears next to that element. By clicking the icon, you can view the details of the change to be made.

Benefit provided by this new feature of version 27:
Update your projects effortlessly

- Control too small to be touchscreen-friendly
- Conflicting anchors
- Multiple controls with the same logical name.
- 2 OK or Cancel buttons in a window
- ...

Benefit provided by this new feature of version 27:
Improve your applications!

067 New feature WD WB WM THE REAL-TIME AUDIT DETECTS DEPRECATED FEATURES USED IN YOUR PROJECTS

The lifecycle of some projects span several years. Often, projects use features that date from the time the project was created (technologies that are now outdated or that have been replaced by more secure alternatives), options that have become useless, inefficient. Sometimes, it is necessary to enable more recent options. Version 27 indicates the deprecated technology or the new features and proposes the technology to be used.

This may include, for example:

- an HTML control still in IE6 mode (which prevents modern content from being displayed correctly)
- a Chart or Shape control for which anti-aliasing has not been enabled
- a Camera control in an old version
- any control for which a new useful option is available but has not been enabled
- a Combo Box control that can be made resizable or set to auto-size
- enable autocomplete for controls with a file path input mask
- ...

Version 27 also notifies you about more general problems:

- a background image with transparency but without clipping (which consumes resources unnecessarily)
- an Internal Window control that points to an Internal Window not found in the project
- Binding to a non-existent item or variable
- Control not compatible with the current configuration

068 New feature WD WB WM BETTER PERFORMANCE IN THE EDITOR

Using controls with deprecated features can have a negative impact on the performance of your editors, slow down execution, generation, template updates, etc.. It is therefore a good idea to replace these old features with up-to-date alternatives.

Benefit provided by this new feature of version 27:
Faster editor

069 New feature WD WB WM BETTER PERFORMANCE AT RUNTIME

Old features slow down execution. A simple way to increase the speed of your applications is to replace these outdated features.

Benefit provided by this new feature of version 27:
Faster sites

070 New feature WD WB WM LIGHTER AND LESS MEMORY-INTENSIVE PAGES

In WEBDEV in particular, using controls with outdated features or parameters can result in larger and more memory-intensive pages. Updating your controls will significantly optimize size and memory consumption.

Benefit provided by this new feature of version 27:
Your pages go on a healthy diet

TECHNICAL AND FUNCTIONAL DOCUMENTATION

071 New feature WD WB WM WEBSERVICE DOCUMENTATION

The automatically generated technical documentation now allows editing information about the generated REST Webservices.

Benefit provided by this new feature of version 27:
A full documentation

074 New feature WD WB WM RECEIVE NOTIFICATIONS ACCORDING TO THE RUNTIME MODE

In Continuous Integration, success notifications can quickly clutter up your messaging system...
In version 27, you can select the type of messages you want to receive, for example only error messages.

Benefit provided by this new feature of version 27:
No news, good news

075 New feature WD WB WM DEPLOYMENT ON PCSCLOUD.NET

In version 27, a new action has been added to the action plan editor: Automatic deployment on the PCSCloud.net server. You can define multiple PCSCloud deployment profiles (see new feature 939).

Benefit provided by this new feature of version 27:
Deploy automatically on PCSCloud.net

PASSWORD SECURITY: USER GROUPWARE



076 New feature WD WB WM SECURE MODE CONFIGURATION: ALL ACTIONS BLOCKED BY DEFAULT

In version 27, the User Groupware allows you to create profiles where all actions are blocked by default. The administrator will have to authorize each action manually...
No more risk of unblocking a sensitive functionality by accident.

Benefit provided by this new feature of version 27:
New practical option to avoid mistakes

077 New feature WD WB WM GET THE DETAILS OF THE LOGGED IN USER

`gpwGetUserInfo`, a new WLanguage function, gets all the accessible information about the current user in a single line of code.

Benefit provided by this new feature of version 27:
More powerful processes

072 New feature WD WB WM ENVIRONMENT VARIABLES: SHARE PARAMETERS

Environment variables have been introduced in the Software Factory.

An environment variable is a value that can be used in the configuration of action plans: a major version number, for example.

This avoids having to modify all action plans that use that value.

Benefit provided by this new feature of version 27:
Less actions required, no risk of forgetting a step

073 New feature WD WB WM SET A COMPUTER TO RESTART AUTOMATICALLY

It may be necessary to reboot a computer at regular intervals, for example every 2 days: reset Windows memory, ...

In version 27, this can be scheduled in the Software Factory administrator.

The robot will complete the current action plan before restarting the computer.

Benefit provided by this new feature of version 27:
Fewer manual actions

GIT / GITHUB



078 New feature WD WB WM GIT: GIT CLONE COMMAND IN THE ENVIRONMENT

You can open a GIT project directly from the environment. No need to use a different tool!

Benefit provided by this new feature of version 27:
Less actions

079 New feature WD WB WM GIT: DISPLAY THE HISTORY IN THE ENVIRONMENT

You can view the GIT history of an element directly in the environment.

No need to use a different tool!

Benefit provided by this new feature of version 27:
An integrated history

080 New feature WD WB WM GIT: CONTROLS: REDUCE CONFLICTS BY REORGANIZING THE SOURCE OBJECT

A WINDEV "Control" is a remarkably powerful and useful object.

In version 27, the internal format of the control has segmented properties, which reduces conflicts resulting from concurrent modifications of different elements: it is less likely that multiple developers try to modify the same segment.

Benefit provided by this new feature of version 27:
Easier to use in Git

081 New feature WD WB WM GIT: DIFF OF A HISTORY ENTRY

You can view the GIT history and compare changes of an element directly in the environment.

No need to use a different tool!

Benefit provided by this new feature of version 27:
Less actions

IMAGE EDITOR

082 New feature WD WB WM INTEGRATED IMAGE EDITOR: TAKE ADVANTAGE OF ALL THE NEW FEATURES OF THE IMAGE EDITOR CONTROL

The image editor integrated in the environment benefits from all the new features of the Image Editor control introduced in version 27.

See new features 046 to 050

Benefit provided by this new feature of version 27:
A more powerful image editor for developers

WDMMSG AUTOMATIC TRANSLATION



083 New feature WD WB WM SEARCH IN THE FILES TO BE EXTRACTED

WDMMSG now allows you to perform searches in files to be extracted.

Benefit provided by this new feature of version 27:
Translate only specific elements

084 New feature WD WB WM WDTRAD: MULTIPLE NEW FEATURES

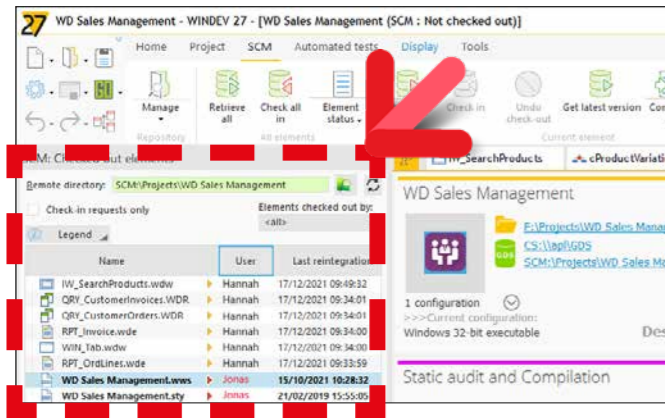
WDTRAD boasts a new UI and new practical features:

- Find/replace in the dictionary with regular expressions
- Improved translation search: Regular expression search before full-text search
- Dictionary window: floating panes
- New translation propagation option: to the whole document or to the elements currently displayed
- Filters on search results are saved
- Multi-selection in search results: useful for bulk editing, ...

Benefit provided by this new feature of version 27:
Time saved

SCM - COLLABORATIVE SOURCE CODE MANAGER

085 New feature WD WB WM SCM: PANE IN THE ENVIRONMENT: WHO CHECKED OUT WHAT?



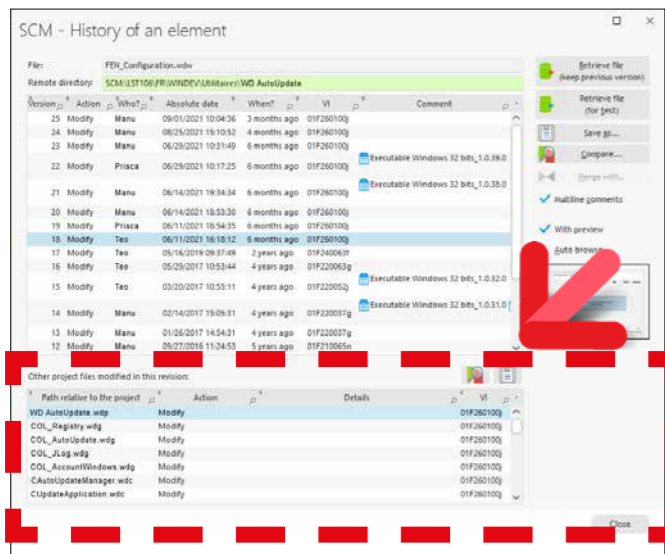
New "Checked out elements" pane

In version 27, the SCM includes a new pane that shows which elements have been checked out by the team, and which developer has checked out each element, all in real time. This provides an overview of the work in progress at any given time...

This pane also allows you to send a message to the developer who checked out the element (see new feature 087).

Benefit provided by this new feature of version 27:
Now you know

086 New feature WD WB WM SCM: HISTORY OF AN ELEMENT VIEW REVISIONS



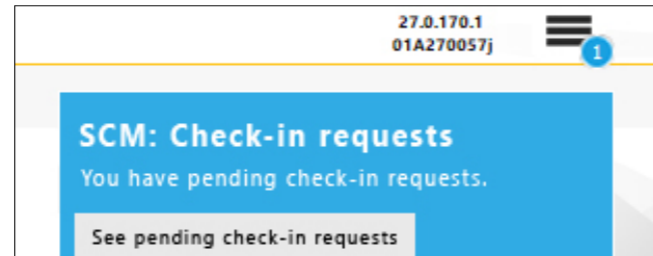
List of elements for the selected revision

The history window of an element displays the revisions. In version 27, this window also displays the details of this revision: all the elements involved in the revision.

- 3 actions are available by clicking on an element:
- view the history
 - view the changes in this revision
 - save the element to disk.

Benefit provided by this new feature of version 27:
Everything is in one place

087 New feature WD WB WM SCM: SHOW A CHECK-IN REQUEST NOTIFICATION ON THE SCREEN OF THE DEVELOPER



This message appears in the environment of the developer who performed a check-out

In version 27, check-in requests sent to a developer appear directly in their environment! If the environment is closed, the message is kept on hold and will be displayed when it is opened again.

Benefit provided by this new feature of version 27:
A message that won't be forgotten!

088 New feature WD WB WM SCM: "CHECKED OUT BY" NOTIFICATION WHEN OPENING AN ELEMENT



You are notified immediately if the element has been checked out by another developer

In version 27, when you open an element, a notification appears immediately if another developer has already checked out that element. You won't have to find out later on when you try to make changes...

Benefit provided by this new feature of version 27:
No surprises!

089 New feature WD WB WM SCM: NON-BLOCKING HISTORY

You can view the history of an element without blocking the environment.

Benefit provided by this new feature of version 27:
No longer stuck with old history entries!

090 New feature WD WB WM SCM, BRANCHES: IMPROVED MERGE

The methods for renaming project elements and managing relations between controls during a merge operation have been reviewed and improved.

In earlier versions, some changes had to be propagated manually between branches. Version 27 automatically propagates changes made to the following elements:

- Radio Button and Check Box options
- Table control columns
- Looper attributes
- Tab panes
- order changes
- relations between controls (controls contained in other controls)
- ...

You will be notified if a manual action is required.

Benefit provided by this new feature of version 27:
Fewer operations

091 New feature WD WB WM SCM: MISCELLANEOUS

- Easier access to multiple SCM repositories
- Branch creation: the error report (if any) is displayed only after the branch has been created. Minor errors no longer interrupt the branch creation process
- Branch creation: shared files between projects are always managed

Benefit provided by this new feature of version 27:
Simplified actions

CODE EDITOR

092 New feature WD WB WM MULTILINGUAL MESSAGES: NEW TECHNOLOGY

The current technology for managing multilingual strings is kept for compatibility. A new technology has been implemented in version 27 in

order to make things easier. It gets rid of the numbering used for multilingual strings, along with its constraints.

Benefit provided by this new feature of version 27:
A more robust technology

093 New feature WD WB WM AI NOW POWERS CODE COMPLETION

Code completion evolves in version 27. The three most relevant suggestions appear at the top of the list.

These suggestions are the result of an AI learning process fed by a large number of projects. The input history is also used to select these suggestions. For example, if an `int` variable is declared, it will appear as a suggestion in the following call to a function that uses an integer.

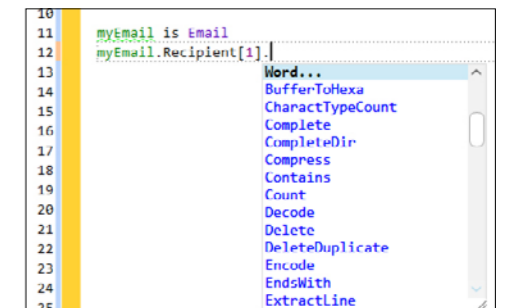
Another example: after a line of code containing the `HReadFirst` function, `HReadNext` will appear in the suggestions as soon as you type "h" ...

You will certainly enjoy this new code completion feature.

Benefit provided by this new feature of version 27:
What you need, when you need it

094 New feature WD WB WM COMPLETION ON ADVANCED TYPES

The code editor offers code completion for all the arrays in advanced types.



Completion on an Email type that contains an array of strings

Benefit provided by this new feature of version 27:
Completion with relevant suggestions

095 New feature WD WB WM 3 NEW CODE WIZARDS

Code wizards ask questions to generate the code or set the appropriate parameters.

3 new code wizards are introduced in version 27:

- definition of parameters of `HTTPSend` and `RESTSend`
- `HttpRequest` type initialization
- use of the `AuthIdentify` function

Benefit provided by this new feature of version 27:
Generate code with ease



096 New feature WD WB WM SWITCHING TO PREFIX SYNTAX?: CONVERT THE EXISTING CODE TO PREFIX SYNTAX WITH A SINGLE CLICK

A new option in version 27 allows you to change the code of an existing project to prefix syntax.

Benefit provided by this new feature of version 27:
One change applied to the whole project

097 New feature WD WB WM CODE EDITOR: MISCELLANEOUS

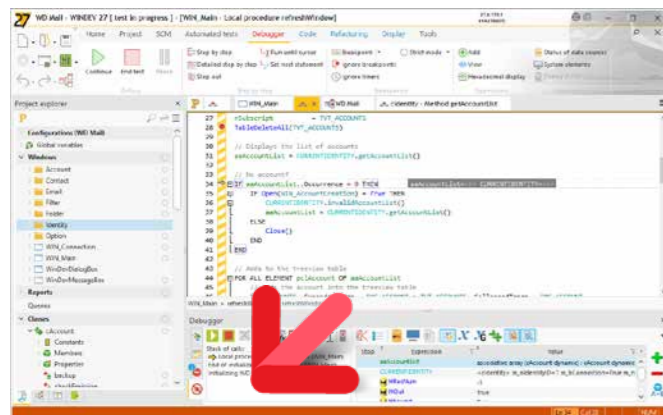
- The procedure documentation completion feature becomes more user-friendly
- Code completion now also includes WLanguage keywords.

Benefit provided by this new feature of version 27:
Useful improvements

DEBUGGER

098 New feature WD WB WM THE COLOR OF THE STATUS BAR OF THE ENVIRONMENT REMINDS YOU THAT YOU ARE IN A DEBUG SESSION!

In version 27, you will never forget that you are in debug mode!
The status bar of the environment changes color to orange during a debug session.
Simple, yet useful!



The orange bar reminds that debugging is in progress

Benefit provided by this new feature of version 27:
A useful color bar

DEVOPS

099 New feature WD WB WM INTEGRATED DEVOPS ENVIRONMENT

WINDEV, WEBDEV and WINDEV Mobile version 27 form an increasingly cohesive DevOps environment.

You benefit from all the necessary functionalities to implement the DevOps approach: no more scattered, barely-compatible tools. You have all the integrated tools to manage the DevOps methodology: life cycle management, sprints, testing, continuous integration, deployment, continuous delivery, production, user feedback,...

Benefit provided by this new feature of version 27:
Open to all methodologies

REPORT EDITOR

100 New feature WD WB WM DON'T LOOK ANY FURTHER FOR CODE: CODE TREEVIEW FOR REPORTS

See new feature 045
The new feature that allows you to identify controls that contain code is essential in the report editor!
The code can be in different processes of the report.
Version 27 makes it easy to resume development on a report created years before or created by another developer.

Benefit provided by this new feature of version 27:
The tree does not hide the code, but all the opposite

101 New feature WD WB WM GANTT REPORT: EVEN MORE DETAILS

Many users print Gantt charts.
Version 27 provides additional settings:

- you can display week numbers
- you can display an indication of the current day.

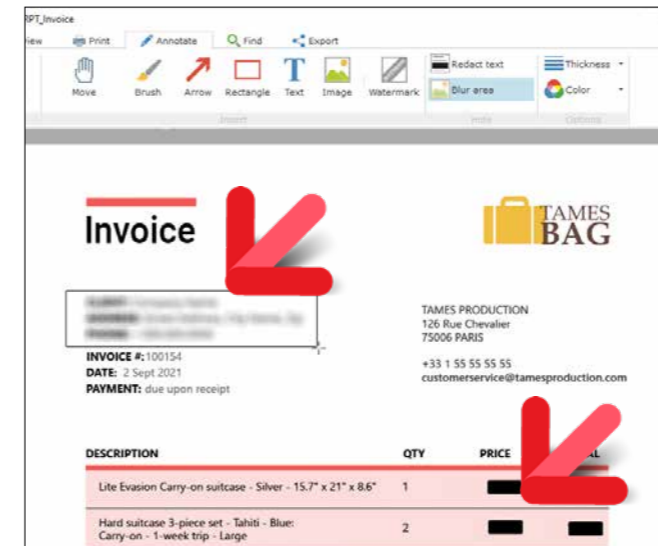
Benefit provided by this new feature of version 27:
More and more options

102 New feature WD WB WM REPORT EDITOR: BLUR OR REDACT AN AREA IN THE REPORT VIEWER

The blur option has been added to the report viewer (report print preview).

The end user can blur or redact one or more areas, usually containing sensitive information, before distributing or print-

ing the report.



In this report, the delivery address has been blurred and the prices have been redacted

Benefit provided by this new feature of version 27:
Easily protect sensitive data!

103 New feature WD WB WM REPORT EDITOR: BLUR OR REDACT AN AREA THROUGH PROGRAMMING

The new `..Hidden` property and the `Blur` and `Redaction` constants can be used to specify the name of the area or controls to be blurred or redacted when printing a report.
The level of blur can be adjusted.

Benefit provided by this new feature of version 27:
More options through programming



WLANGUAGE



104 New feature WD WB WM MULTITHREADED COMPILATION: EVEN FASTER

The multithreaded compilation mode introduced in the previous version significantly improved compilation times.
Version 27 is even faster, as it uses all available cores by default.

Benefit of this new feature in version 27:
Use all processor cores



105 New feature WD WB WM COMPILATION AND GENERATION, SELECT NUMBER OF CORES

As presented above, in version 27, multithreaded compilation uses all available processor cores by default.
You can specify the number of cores to be used, which allows you to tune performance, handle special cases, and allow other processes to continue to run at reasonable speed.

Benefit provided by this new feature of version 27:
Manage specific use cases

106 New feature WD WB WM "OPEN" FUNCTIONS: OPTIONAL (NAMED) PARAMETERS

The `Open` WLanguage function uses a variable number of parameters.

To avoid entering all the parameters, it is now possible to name the parameters and enter only those that are used.

```
Open(WIN_Trip, <tripid>: 12546, <bAvailable>: False)
```

Benefit provided by this new feature of version 27:
Clearer code

107 New feature WD WB WM NEW /= AND *= OPERATORS

The /= and *= operators are introduced in this version. Just like the += and -= operators, they simplify source code.

```
PROCEDURE Promo(Price is currency, Discount is real)
//Apply discount
Price *= Discount
RETURN Price
```

Benefit provided by this new feature of version 27:
More concise code

108 New feature WD WB WM COMMENTS IN THE MIDDLE OF A LINE OF CODE: BETWEEN /* AND */

A new way to comment code is now available. /* indicates the beginning of the comment, and */ indicates the end of the comment, which can span over multiple lines. This syntax also allows you to comment out a section of code in the middle of a line!

```
IF Customer.Email <> <C3>""</>C3> /* _and_ customer.VIP =
true */ THEN
```

Benefit provided by this new feature of version 27:
Practical feature

109 New feature WD WB WM MULTILINE STRINGS DEFINED BY QUOTATION MARKS ""

Version 27 supports the "" (quote) syntax, to make entering multiline strings easier.

```
SubscriptionInfo is string = "
Thank you for your subscription.
A confirmation email has been sent to your email address.
If you haven't received it yet, click the following link: '%1'.
"
```

Benefit provided by this new feature of version 27:
Write as many lines as needed...

110 New feature WD WB WM LAMBDA CALLS, GETTER AND SETTER: OPTIMIZATIONS

In version 27, lambda calls, property getters and setters are faster.

Benefit provided by this new feature of version 27:
Faster is definitively better

111 New feature WD WB WM N++ AND ++N , N-- AND --N

You already know the difference between the ++ operators placed before or after the variable.

N++ increments the value after evaluating the expression, whereas ++N does it before.

That changes everything!

In version 27, both syntaxes are available: ++ and --

Benefit provided by this new feature of version 27:
Yes, they are actually available

112 New feature WD WB WM REGULAR EXPRESSIONS: FIND AND REPLACE

Regular expressions are a very powerful concept, and allow for very concise code.

In version 27, regular expressions are even more powerful.

You can search for and even replace a string in another string, using a regular expression!

All in one line of code.

Two new WLanguage functions are also introduced: **Regex-Search** and **RegexReplace**.

Benefit provided by this new feature of version 27:
More concise code

113 New feature WD WB WM LUHN ALGORITHM: VERIFY OR CALCULATE THE CHECK DIGIT

The Luhn algorithm is used to calculate the check digit of a credit card number, and to detect false numbers.

Two WLanguage functions are introduced in version 27 to calculate and verify this check digit: **LuhnCalculate** and **LuhnCheck**.

Benefit provided by this new feature of version 27:
A widespread, reliable algorithm

114 New feature WD WB WM PASSWORD SECURITY: PBKDF2 HASHING

PBKDF2 is a very powerful hashing algorithm.

Its main purpose is to securely hash data, especially passwords.

This type of hashing is also used to obtain a series of derived keys (passwords) from a password.

The **HashString** and **HashFile** functions now accept the new **PBKDF2** constant, which expects the salt, number of iterations and key size as parameters.

Benefit provided by this new feature of version 27:

Continues page 28...

AI: AUTOMATICALLY DETECT PEOPLE AND OBJECTS IN IMAGES



115 New feature WD WB WM ARTIFICIAL INTELLIGENCE ANALYZES PHOTOS AND IMAGES

Version 27 features an artificial intelligence engine to detect objects in images.

The new **aiDetect** and **aiModelDetect** functions, as well as the **aiImageResult** and **aiNeuralNetworkModel** WLanguage types, allow for easy programming.

Benefit provided by this new feature of version 27:
New feature provided as standard

116 New feature WD WB WM 82 DEFAULT OBJECTS + YOUR OWN OBJECTS

Note: we are not objects, sure, but the concept of "object" also includes living beings.

82 objects are included as standard: face, human being, dog, cat, table, car, license plate, ...

You can define other objects to be detected. In this case, you will need to provide the object recognition model.

Benefit provided by this new feature of version 27:
Standard or custom objects

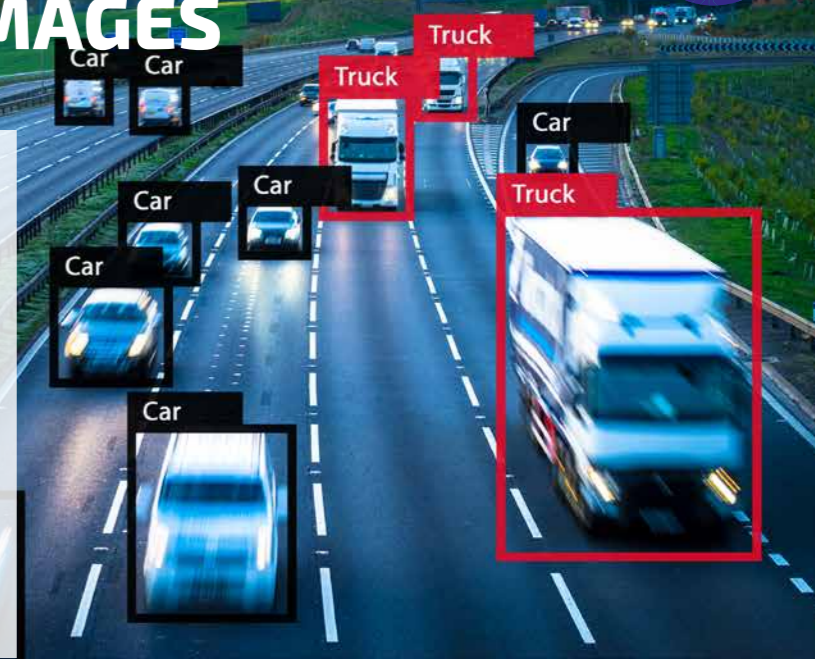
117 New feature WD WB WM PROGRAMMING

There are 3 common uses for the standard list of objects:

- detect all objects in the image
- detect a given object in the image: all dogs, all cars, all license plates...
- detect a given list of objects.

aiDetect returns an array of **aiImageResult** containing the type of object, the coordinates of the polygon that contains the object and the confidence level.

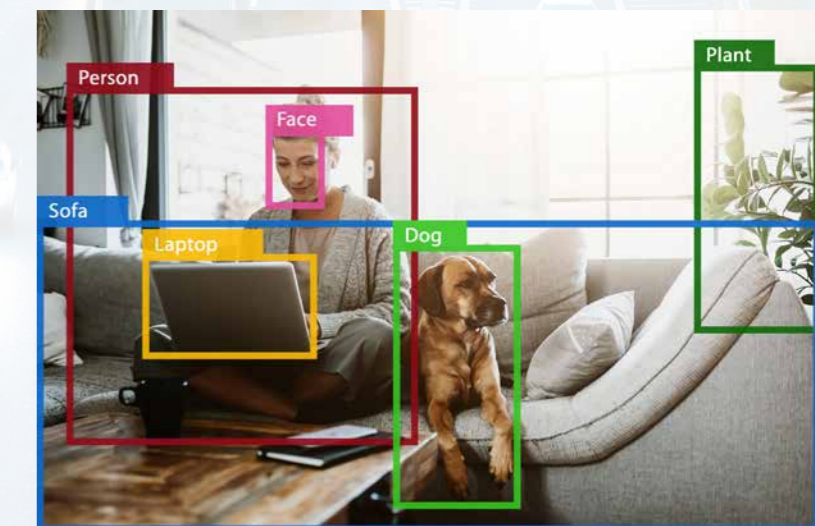
On the other hand, code that uses custom models returns a



matrix that depends on the provided model.

Benefit provided by this new feature of version 27:
Programming in WLanguage

118 New feature WD WB WM USE EXAMPLES



There are many examples of the use of automatic object detection:

- Blur an object automatically: face, license plate... (see also new feature 123)
- Detect a face in a profile picture
- Crop a face
- Count vegetables automatically
- Classify images
- Counting
- ...

Benefit provided by this new feature of version 27:
Photos come to life

GO FURTHER WITH VERSION 27



Continued from page 26

Now passwords are to be taken with a pinch of salt

119 New feature WD WB WM HANDLING HTML DOCUMENTS THROUGH PROGRAMMING: USEFUL IMPROVEMENTS

The WLanguage functions used to handle HTML documents are already very powerful. Version 27 includes new properties that further simplify code. `.Index` gets the index of the HTML node `.Parent` gets the parent of a node The new HTML WLanguage functions are also very useful:

HTMLInsertBefore	HTMLInsertAfter
HTMLWrap	HTMLWrapAllChildren
HTMLUnwrapAllChildren	HTMLRemove
HTMLInsertFirstChild	HTMLInsertLastChild
HTMLRemoveChild	HTMLModifyAttribute
HTMLModifyAttribute	HTMLRemoveAttribute
HTMLRemoveAttribute	

Benefit provided by this new feature of version 27:
Handle HTML documents even more easily

120 New feature WD WB WM INIWRITE NO LONGER NEEDS NUMTOSTRING

The `INIWrite` function only accepted strings as parameters. Starting with version 27, `INIWrite` accepts parameters of type `int`, `real`, `boolean`...

Benefit provided by this new feature of version 27:
One less NumToString ... that you might have forgotten

121 New feature WD WB WM PREFIX SYNTAX NOT USED: ABILITY TO DISPLAY A PROGRAMMING STANDARD ERROR

When the programming standard of a project defines the use of prefix syntax (`control.function`) as mandatory, a programming standard error can be generated at compilation time.

Benefit provided by this new feature of version 27:
Now you know

122 New feature WD WB WM NEW COMPILATION DIRECTIVE

A new compilation directive allows you to define a specific mode (32-bit or 64-bit) for the compilation phase. This is especially useful when using external APIs that only work in one mode, either 32-bit or 64-bit.

Benefit provided by this new feature of version 27:
Precision

123 New feature WD WB WM BLURRING AN AREA OF AN IMAGE

The new `dBlur` WLanguage function blurs a rectangle defined by coordinates passed as parameters. A Gaussian blur is applied. The radius of the blur is passed as parameter. See new feature 048.

Benefit provided by this new feature of version 27:
Blur an area with precision

124 New feature WD WB WM ZIP COMPRESSION FUNCTIONS: CLEARER ERROR MESSAGES

The error messages from `zip` functions are more precise and allow a quicker understanding of the problems that may occur.

Benefit provided by this new feature of version 27:
Easier debugging

125 New feature WD WB WM ENCRYPTSTANDARD FUNCTION: PASS THE INITIALIZATION VECTOR AS PARAMETER

The `EncryptStandard` WLanguage function manages all the encryption parameters automatically. In some cases, the encryption initialization vector is imposed by the device the application communicates with. Now you can pass this initialization vector to the function as a parameter.

Benefit provided by this new feature of version 27:
Manage special cases

126 New feature WD WB WM MISCELLANEOUS

- The `API description` type now supports 1 and 2-byte integers, both signed and unsigned.
- It is now possible to edit an image's `Exif` data
- 32-bit applications can also access the 64-bit Registry, and vice versa.

Benefit provided by this new feature of version 27:
Useful improvements

WEBSERVICES

127 New feature WD WB WM WEBSERVICE: FORCE HTTP2

There are 2 HTTP standards: HTTP1 and HTTP2. When calling a server, the client and server "negotiate" to agree on the protocol version to use. However, some servers use only one standard: HTTP2. Version 27 allows you to force the use of HTTP2.

Benefit provided by this new feature of version 27:
It's a non-negotiable!

128 New feature WD WB WM SOAP HEADER: ADD XML NODES

You can add a node to a SOAP web service header with the new `SOAPAddHeader` function.

Benefit provided by this new feature of version 27:
Practicality

129 New feature WD WB WM HTTP DELETE REQUEST

In some cases, `Delete` HTTP requests require passing data. In version 27, you can pass this data.

Benefit provided by this new feature of version 27:
Useful for CRUD operations

XML

130 New feature WD WB WM NEW FUNCTIONS: JSONTXML AND XMLTOJSON

In version 27, the new `JSONTXML` and `XMLTOJSON` WLanguage functions allow you to automatically convert one format to the other.

```
DocJSON is JSON = fLoadText(JSONFile)

DocXML is xmlDocument
DocXML = JSONTXML(DocJSON)
```

`JSONXMLConverter`, a new WLanguage type, opens new options to configure and customize the conversion process: conversion of XML attributes, namespaces, empty tags...

Benefit provided by this new feature of version 27:
Effortless conversions

131 New feature WD WB WM ACCESS STRUCTURE MEMBERS AND MEMBERS OF TYPE ARRAY: 30% FASTER

When aggregating arrays (members of type `object`), you can access structure members 30% faster in version 27. The same applies to members containing `arrays of objects`.

This is a major advantage in projects where Object Oriented Programming is mainly used.

Benefit provided by this new feature of version 27:
Faster applications

132 New feature WD WB WM ACCESS PROPERTIES FASTER

In version 27, the access to properties is faster. An improvement of over 20% was observed.

Benefit provided by this new feature of version 27:
Faster processes

133 New feature WD WB WM POLYMORPHIC "FOR EACH"

You can loop through an array of objects that contains derived classes, taking into account only the objects of a given class: it's a polymorphic `FOR EACH` statement.

```
arrVehicles is array of CVehicle

//Calculate total number of packages shipped
TotalPackagesShipped is int
FOR EACH c1Truck OF TYPE Truck OF arrVehicles
    TotalPackagesShipped+= c1Truck.PackagesShipped
END
```

Benefit provided by this new feature of version 27:
More advanced possibilities

134 New feature WD WB WM CODE THE EQUALITY AND COMPARISON OPERATORS MORE EASILY

Coding the `<` and `>` operators is easier in version 27. New compilation directives allow you to declare the members to be compared as well as the order of comparison.

```
GLOBAL PROCEDURE CompareVehicle(Car1, Car2) <comparison>
    Compare(Engine)
    CompareDescendingOrder(Consumption)
    CompareAscendingOrder(Range)
```

Benefit provided by this new feature of version 27:
Less code

135 New feature WD WB WM OOP: MISCELLANEOUS

- You can set the default comparison operator.
- The `<Useful>` and `<ForceDestructor>` attributes can now be used with classes.

Benefit provided by this new feature of version 27:
Less code

COMPATIBILITY WITH THIRD-PARTY LANGUAGES

137 New feature WD WB WM PYTHON: NATIVE PYTHON CALLS IN WLANGUAGE



You can now call Python code natively from WLanguage, just like .Net assemblies, SOAP web services, etc... Importing the `.py` file into the environment allows the code editor to automatically recognize all the functions of the `.py` script. Each function in the script is then considered as a WLanguage native function. The Python engine is initialized using the `PythonInitialize` function.

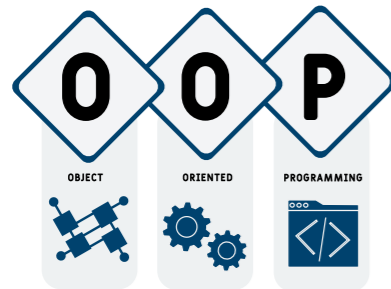
```
== WLanguage code ==
sResult is string
sResult = solver("3x**2-2x+5")

== Python code ==
from sympy.solvers import solve
from sympy import sympify

def solver(equation):
    return str(solve(sympify(equation)))[2:-1]
```

Benefit provided by this new feature of version 27:
Compatibility with another language!

OOP



IOT

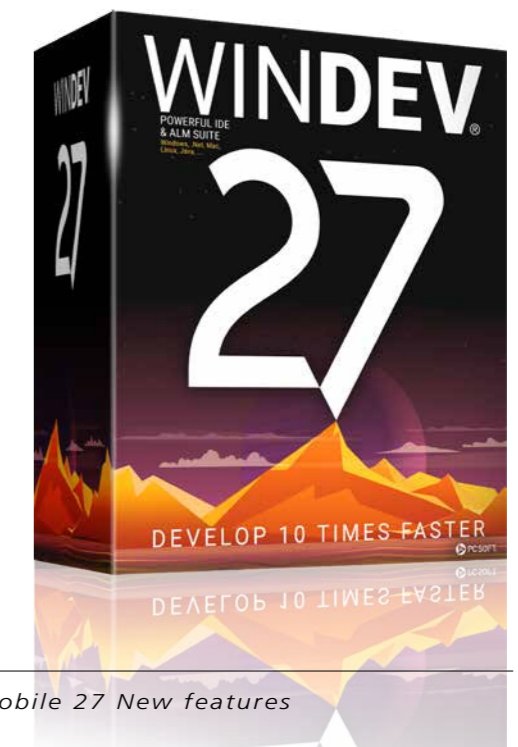


136 New feature WD WB WM IOT: BLUETOOTH LOW ENERGY (BLE) FUNCTIONS



Bluetooth Low Energy reduces the power consumption of the device. This protocol is now supported in WINDEV, in addition to WINDEV Mobile.

Benefit provided by this new feature of version 27:
Save the planet one device at a time



HFSQL DATABASE

HFSQL®

138 New feature WD WB WM FASTER AND MORE MEMORY-EFFICIENT QUERIES

HFSQL 27 improves the performance of different types of queries.

"Full scan" queries containing dates are 30% faster. Queries with SQL "TOP", "BOTTOM" or "TOP/BOTTOM" clauses use much less memory.

Benefit provided by this new feature of version 27:
Faster SQL

139 New feature WD WB WM TRANSACTIONS BY STEPS: SAVEPOINTS TO DIVIDE TRANSACTIONS INTO PARTS

Need to nest transactions?

You can use savepoints to roll back to an intermediate point of the transaction.

It will be then divided into smaller parts.

During the transaction, the `HTransactionSavepoint` WLanguage function allows you to define and name a savepoint. To undo the part of the transaction after this point, simply use `HTransactionRollbackToSavepoint`.

You can set multiple savepoints in the same transaction.

Benefit provided by this new feature of version 27:
Flexibility to resume transactions

140 New feature WD WB WM NEW "FILE ALIAS" TYPE TO SIMPLIFY PROGRAMMING

Aliases have always been available in HFSQL.

An alias allows you to perform one or more iterations on a file already in use without affecting the current iteration(s).

The use of aliases is simplified in version 27.

Simply write:

`Customers2 is alias of Customers`

and that's all there is to it!

Benefit provided by this new feature of version 27:

No more HAlias, HChangeName, HChangeConnection, HChangeDir, HPass

141 New feature WD WB WM HEXPORTJSON

In version 27, `HExportJSON` can also be used to export the data file or query to a `JSON` type in WLanguage, no longer only to a file on disk.

Benefit provided by this new feature of version 27:
Useful option

142 New feature WD WB WM STORED PROCEDURES: RETURN RECORDS OR ARRAYS OF RECORDS

A stored procedure can return records or an array of records. Programming becomes much more structured.

Benefit provided by this new feature of version 27:
Faster processing directly on the server

143 New feature WD WB WM SERVER REPLICATION: LIMIT REPETITIVE NOTIFICATIONS

When the connection to the server cannot be established, a message is generated.

The number of server connection error notifications is limited so as not to clutter up your inbox with the same message.

Benefit provided by this new feature of version 27:
No spam

144 New feature WD WB WM INSTALL ASSISTED UNIVERSAL REPLICATION ON YOUR OWN APPLICATION SERVER, IN WINDOWS AND LINUX

Universal Assisted Replication can now also be installed on a WEBDEV Application Server.

This server can run on Windows or Linux.

See new feature 941

Benefit provided by this new feature of version 27:
More possibilities

PASSWORD SECURITY



NEW "PASSWORD" ITEM

PASSWORDS ARE NOT STORED,
BUT YOUR APP CAN CHECK THEM



145 New feature WD WB WM SECURITY: "PASSWORD" ITEM WITHOUT STORED PASSWORD (HASHED/SALTED PASSWORD)



In version 27, a new advanced type of HFSQL item is introduced: the `Password` advanced type.

This new type of item does not store the actual password. The password entered by the end user won't be stored as is. This means there are no chances of hacking into the database to obtain this password.

How is this possible?

Before being stored, the password will be both salted and hashed.

Salting consists in adding a random string to the password. If two users enter the same password, their salted passwords will be different.

This salted password will then be hashed, making it unidentifiable.

The result of these irreversible operations is stored in the database, instead of the original password.

Attackers cannot reverse engineer the password from the result of these operations, but you can still check if a password matches the original one. The password cannot be read, but it can be compared.

You can configure the type of hash, result length and number of iterations.

With this new type of item, hackers can no longer steal passwords by accessing the data file.

Benefit provided by this new feature of version 27:
Store passwords securely

146 New feature WD WB WM HOW TO DETERMINE IF A PASSWORD IS VALID

To determine if a password is valid, simply compare the string entered and the content of the Password item (using the `=` operator).

Since WLanguage is a 5GL, it recognizes the types of the operators and automatically performs the necessary operations. No special programming required!

All related WLanguage functions automatically adapt to this particular type of item.

It supports the Null value and cannot be defined as index in the data file.

The `LastCheckDate` property returns the date the password was last written to the data file.

Benefit provided by this new feature of version 27:
Totally secure passwords with zero code

Continues page 34...

147 New feature WD WB WM ADVANCED ENCRYPTION: AES-192 AND AES-256



The U.S. National Security Agency (NSA) requires at least AES-192 for top secret information. HFSQL 27 supports both AES-192 and AES-256.

Benefit provided by this new feature of version 27:
Hello, NSA? We're good...

148 New feature WD WB WM MISCELLANEOUS

- Now you can rename one or more servers in a Server Replication.

Benefit provided by this new feature of version 27:
You can change your mind

SQL FUNCTIONS

New feature WD WB WM

149 to 150 2 NEW SQL FUNCTIONS

2 new SQL functions for resuming transactions are introduced in version 27.

SAVEPOINT	Defines and names a new savepoint within the current transaction.
ROLLBACK TO SAVEPOINT	Rolls back all actions performed within the transaction since the savepoint was established.

Benefit provided by this new feature of version 27:
Enriched SQL

151 New feature WD WB WM SQL SYNTAX: [% %] TO REPLACE A VARIABLE WITH ITS VALUE

SQL queries written in the code accept a new, useful syntax: [% `variable name` %]. At runtime, the variable name between "%" characters will be replaced with the value of this variable. This avoids having to declare and assign a value to a parameter.

Benefit provided by this new feature of version 27:
More concise code

HFSQLDRIVE YOUR HFSQL DATABASES IN THE CLOUD IN 3 CLICKS

HFSQLDrive allows you to easily and immediately host your databases (tables) in the Cloud.

152 New feature WD WB WM HFSQLDRIVE: SUPPORT FOR STORED PROCEDURES

In version 27, HFSQLDrive supports stored procedures.

Benefit provided by this new feature of version 27:
Additional functionality

HFSQL CLUSTER

153 New feature WD WB WM IMPROVED AUTOMATIC MODIFICATION OF DATA FILES (SDD)

In version 27, HFSQL Cluster improves support for automatic data modification:

- Links
- Secure files
- ...

Benefit provided by this new feature of version 27:
Practicality

154 New feature WD WB WM MISCELLANEOUS IMPROVEMENTS

- Improved installation
- New `HClusterMasterNode` function, to get the cluster master

Benefit provided by this new feature of version 27:
Useful

HFSQL SPARE

155 New feature WD WB WM RENAME SERVERS

HFSQL Spare is a near real-time server backup solution. Version 27 allows you to rename the spare server. Simply enter the new name in the HFSQL Control Center.

Benefit provided by this new feature of version 27:
Practicality

HFSQL CONTROL CENTER

156 New feature WD WB WM NON-BLOCKING DATA FILE REINDEXING

The HFSQL Control Center boasts many practical improvements. In particular, the HFSQL Control Center is no longer blocked by data file reindexing requests. This is very convenient.

Benefit provided by this new feature of version 27:
Less coffee breaks. Sorry!

DATABASE NATIVE CONNECTORS

As you know, there are many Native Connectors for third-party databases: Oracle, SQL Server, AS/400, DB2, MySQL, PostgreSQL, SQLite, xBase, MariaDB, Informix, Progress, Sybase...

These Native Connectors facilitate programming (binding, etc.). They keep evolving in version 27.

157 New feature WD WB WM TRANSACTION SAVEPOINT

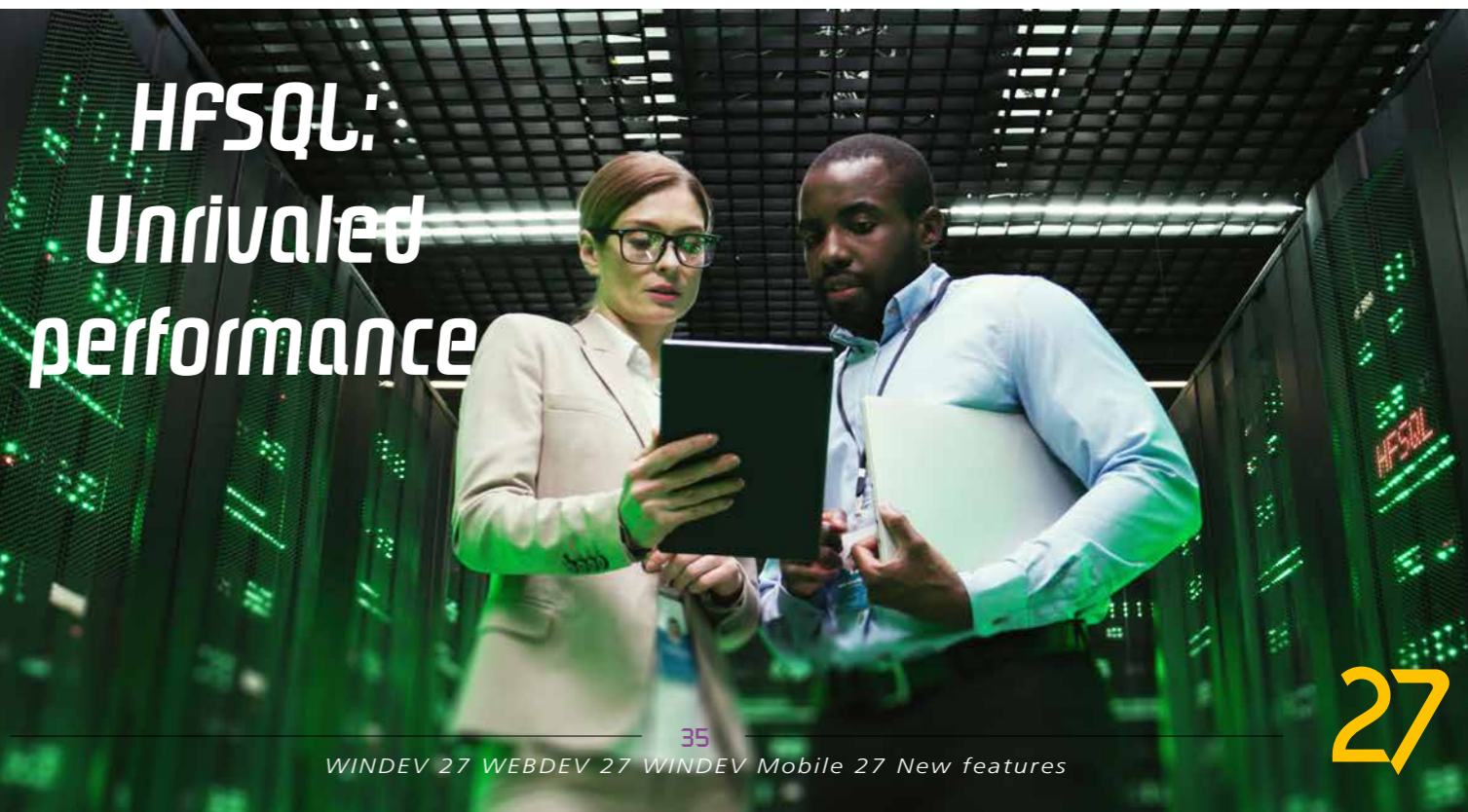
The Native Oracle and MySQL Connectors now support transaction savepoints.

Benefit provided by this new feature of version 27:
Establish intermediate steps

158 New feature WD WB WM FOREACH LOOPS WITH A CONDITION ON AN ITEM: HIGHER SPEEDS

`ForEach` loops that use a condition are faster with Native Connectors in version 27.

Benefit provided by this new feature of version 27:
Faster processes



HFSQL®

GRAPHIC QUERY EDITOR

159 New feature WD WB WM SELECTION OF ITEMS: SEARCH MAGNIFIER

The treeview mode in the main window of the query editor now includes a search magnifier. This gives you the ability to select items more quickly. A search magnifier is also available for output items.

Benefit provided by this new feature of version 27:
Easier searches

BLOCKCHAIN



160 New feature WD WB WM BITCOIN INPUT MASK

A new input mask is introduced in version 27: the Bitcoin input mask. This mask allows you to enter values in the unit of your choice: BTC, mBTC, Satoshi.

Benefit provided by this new feature of version 27:
A new useful input mask

TELEMETRY



Telemetry allows you to collect and aggregate personally-identifiable or anonymous information on how your applications are used: selected menus, functionalities used, duration of processes and queries, possible bugs, use time ranges... Telemetry also allows you to identify the OS versions and hard-

ware configuration used by end users, which can be essential, especially for software publishers. Telemetry evolves in version 27.

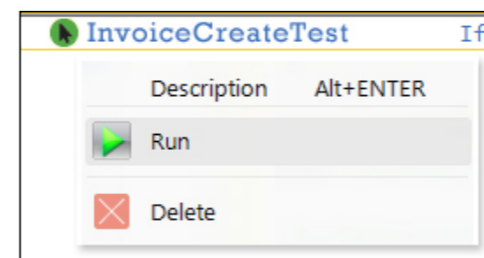
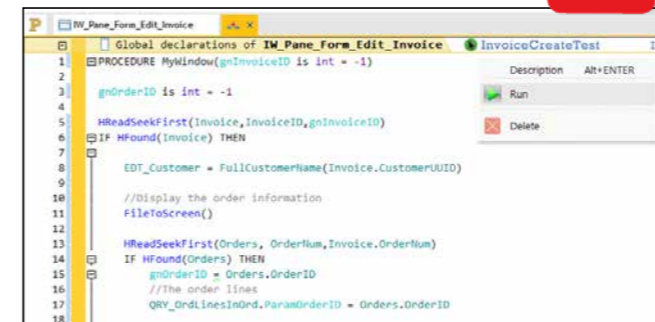
161 New feature WD WB WM COPY/PASTE CUSTOM WIDGETS

Widgets can be used to display data retrieved via custom metrics. In version 27, you can easily create new widgets from existing ones.

Benefit provided by this new feature of version 27:
Easily create new widgets

AUTOMATED TESTS

162 New feature WD WB WM EASILY ACCESS UNIT TESTS FROM THE CODE HEADER



Easier access to automated tests

It is now easier to create unit tests: you can do so directly from the code header. Additionally, if a window contains unit tests, they now appear in the header and can be started directly from the code editor. This encourages developers to create and run tests, thus improving code and application quality.

Benefit provided by this new feature of version 27:
Quality pays off

163 New feature WD WB WM STOP ON TESTCHECK AND AUTOMATICALLY GO TO THE ITERATION THAT CAUSES A BUG

A given test can be run with hundreds or thousands of different data sets (iterations). The **TestCheck** WLanguage function allows you to make sure the result of a test is valid. In version 27, when **TestCheck** encounters an error, the test stops automatically in the debugger on the current iteration: you will know exactly which dataset was used for the test (current iteration), making debugging easier.

Benefit provided by this new feature of version 27:
Easier debugging

164 New feature WD WB WM AUTOMATED INTERNAL COMPONENT TEST

In version 27, you can set automated tests for internal components.

Benefit provided by this new feature of version 27:
Extended test automation

MONITORING BOT (WATCHDOG)

165 New feature WD WB WM SMART HARD DRIVE STATUS MONITORING

In version 27, the Monitoring Robot also monitors the physical status of hard drives.

An alert is generated if a possible error is detected.

Benefit provided by this new feature of version 27:
Avoid data loss

166 New feature WD WB WM WEBDEV CLUSTER MONITORING

In version 27, the Monitoring Robot also monitors WEBDEV clusters.

An alert is generated as soon as a problem is detected.

Benefit provided by this new feature of version 27:
Monitor production servers

Riding the wave of
version 27

167 New feature WD WB WM SCMDRIVE : CONNECTION TO CONTROL CENTERS

SCMDrive can now connect to the Control Centers. In version 27, the Monitoring Robot can send alert messages to users registered in SCMDrive.

Benefit provided by this new feature of version 27:
Avoid duplicates

168 New feature WD WB WM SECURE SMTP SERVERS

In version 27, you can use secure SMTP servers (ports 465 and 587) to send alerts.

Benefit provided by this new feature of version 27:
Better privacy

BIG DATA

169 New feature WD WBWM REDIS

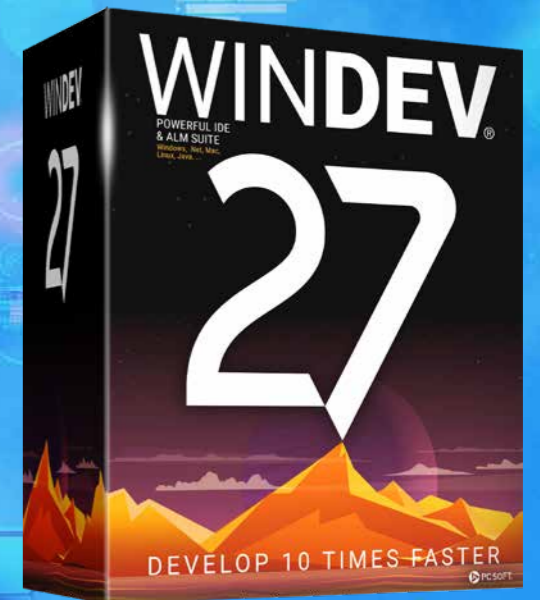
2 new functions for Redis databases are introduced.

RedisSet and **RedisGet** set and get a string in a key, respectively.

Benefit provided by this new feature of version 27:
Clear syntax



WINDEV®



my strength

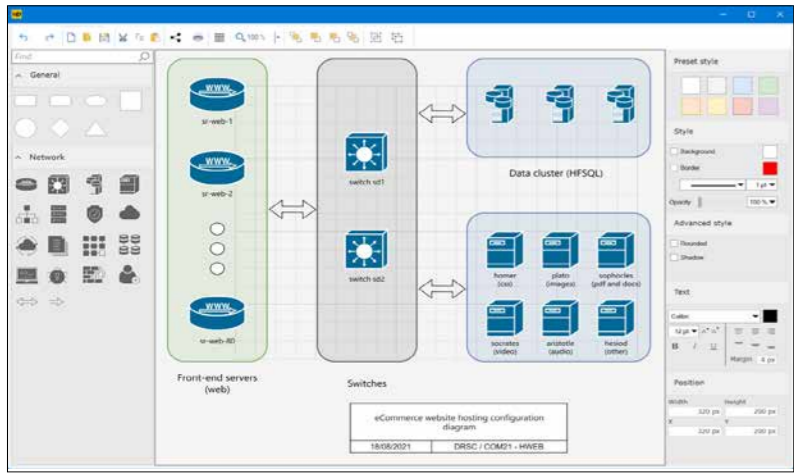
170 New feature WD WB WM BENEFIT FROM THE 169 COMMON NEW FEATURES OF VERSION 27 IN WINDEV



WINDEV benefits from the 169 new common features in version 27, especially: higher speeds, new controls, improvements of the PDF control, Windows 11 support, detection of obsolete technology in the code, AI object detection, new features of the code editor, improvements of the Project Monitoring Center, secure passwords in HFSQL, new features of WLanguage, etc.

Benefit provided by this new feature of version 27:
Hundreds of new features for WINDEV in version 27

NEW: DIAGRAM EDITOR CONTROL



171 New feature WD WB WM THE DIAGRAM CONTROL: ESSENTIAL IN WINDEV

The new Diagram control will be an essential addition to your WINDEV applications. The ability to easily create diagrams and make this functionality available to end users opens up new possibilities. Besides being remarkably powerful, this control is very easy to use: everything is integrated in the control! See new features 001 to 020 **Benefit provided by this new feature of version 27:** A truly powerful control

3 NEW SMART CONTROLS IN WINDEV 27

172 New feature WD WB WM 3 NEW SMART CONTROLS PROVIDED IN WINDEV 27

Smart controls save valuable time during the UI creation process, and immediately make you applications more sophisticated. 3 new Smart controls are introduced in WINDEV 27:

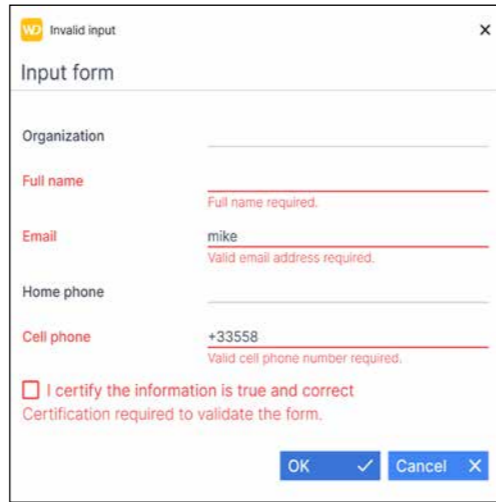
- Tokenized email address input with autocomplete
- Form with non-blocking required input
- Drag & Drop rows in a Looper control

Reminder: Smart controls are provided with their source code, and are therefore completely modifiable and customizable.

Benefit provided by this new feature of version 27: Extremely useful controls

173 New feature WD WB WM NEW SMART CONTROL FORM WITH NON-BLOCKING REQUIRED INPUT

The "Form with non-blocking required input" Smart control is preconfigured with a non-blocking input mode. It can be used to create input windows, or to understand the different possibilities of non-blocking required input.

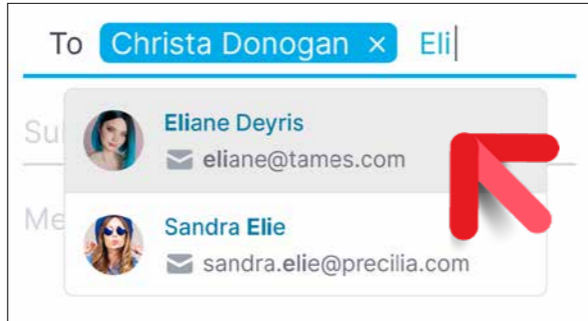


Required input fields that are left empty and data that does not match the input mask are highlighted in red. You can navigate between controls

Benefit provided by this new feature of version 27: Everything is automatically managed

174 New feature WD WB WM NEW SMART CONTROL TOKENIZED EMAIL ADDRESS INPUT

The "Tokenized email address input" Smart control shows the list of selected recipients as tokens. A list of suggestions appears as you type the addresses of the recipients.

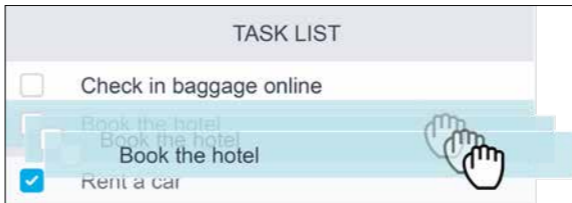


Each selected recipient appears as a token

Benefit provided by this new feature of version 27: Modern UI

175 New feature WD WB WM NEW SMART CONTROL DRAG & DROP IN A LOOPER CONTROL

The "Drag & Drop in a Looper" Smart control allows the end user to reorder elements in a Looper control via a simple drag & drop. A ghost image of the row appears while the row is moved.



Drag & Drop rows in a Looper control

Benefit provided by this new feature of version 27: Sophisticated UIs

TABLE CONTROL: NEW FEATURES

The Table control is one of the most powerful and widely used controls in WINDEV applications. In version 27, your tables are even richer.

176 New feature WD WB WM TABLE CONTROL: COLUMN OF TYPE ATTRIBUTE

"Attribute" columns are introduced in the Table control in version 27. This type of column can store a value that will not be displayed in the table. This avoids creating hidden columns to store values needed during the development phase.

Benefit provided by this new feature of version 27: Harmonization with Looper controls

177 New feature WD WB WM TABLESEARCHEVERYWHERE: SEARCH IN ALL COLUMNS OF THE TABLE

The new `TableSearchEverywhere` WLanguage function searches for a string in the whole table. It is no longer necessary to search column by column.

Benefit provided by this new feature of version 27: Less code

178 New feature WD WB WM ..STOREDVALUE: BINDING SOURCE

The `..StoredValue` property is now available for tables populated by data binding. This property allows you to identify the data source of the current row in the table.

Benefit provided by this new feature of version 27: Less code



ENVIRONMENTAL POLICY

Preserving our environment is essential. When PC SOFT prints physical documents, PC SOFT, the paper supplier or the printer, (FSC - Forest Stewardship Council - certified and PEFC - Program for the Endorsement of Forest Certification - certified) replants as many trees as the ones that were used to print. The FSC label was created by the FSC, an NGO that includes, among others, Greenpeace, Friends of the Earth and the WWF. For example, it takes 50 trees with a trunk diameter of 6 inches to print 100,000 copies of a 92-page document on glossy paper: PC SOFT or the printer has 50 trees replanted immediately. Also, we favor pulp coming mainly from recycled wood (from furniture mills for instance) and from controlled forest clearing. Our products can be delivered without packaging or paper documentation on simple request. For example, a license for 10 developers can be supplied with only 2 sets of tutorials, on request.

NEW FEATURES FOR CONTROLS

179 New feature WD WB WM PVT CONTROL: REMEMBER LAST CRITERIA SELECTED

In version 27, the selected criteria are saved for the next time the user opens the control: end users no longer have to specify the criteria each time.

Benefit provided by this new feature of version 27:
Less actions for end users

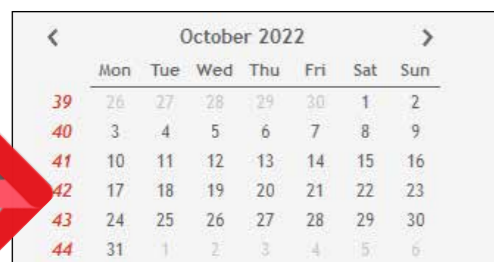
180 New feature WD WB WM OPEN WINDOWS WITH TABS: INCREASED SPEED

Your applications contain windows with tabs? These windows open more quickly in version 27.

Benefit provided by this new feature of version 27:
Better-performing applications

181 New feature WD WB WM CALENDAR CONTROL: DISPLAY THE WEEK NUMBER

The Calendar control in version 27 allows you to display the week number.



The week number can be displayed

Benefit provided by this new feature of version 27:
Useful information in your calendars

182 New feature WD WB WM SCROLLBARS: NEW "WINDOWS 11" STYLE AVAILABLE

This style is available for Windows 10 and 11. Version 27 has a new scrollbar style: the "Windows 11" mode. In this mode, the scrollbar appears as a thin line when the cursor is away from it. When hovered over, it "regains" its usual width.

Benefit provided by this new feature of version 27:
New behavior for scrollbars

183 New feature WD WB WM INTERNAL WINDOW: STYLE

In version 27, you can define a style for an Internal Window control

Benefit provided by this new feature of version 27:
Now, that's style!

184 New feature WD WB WM INTERNAL WINDOW AND LAYOUT CONTROL: APPLY SKIN TEMPLATES

In version 27, you can apply skin templates to Internal Windows and Layout controls at runtime. This allows you to change the appearance of a running application, for example to switch to dark theme.

Benefit provided by this new feature of version 27:
Change the appearance at runtime

185 New feature WD WB WM HTML CONTROL: EASIER DEBUGGING

An HTML control can contain JavaScript code. In version 27, you can activate the Chrome debugger and attach it to the HTML control in order to debug the JavaScript code.

Benefit provided by this new feature of version 27:
Easy DevTools debugging

186 New feature WD WB WM TEXTS: FONT SIZE UNITS, CHARACTER AND LINE SPACING

There are new available settings for the text present in controls (whether it is the label of the control, text entered or simply displayed).

This makes it easy to fine-tune the text:

- new and more precise line spacing/size units are introduced (pixel, point)
- you can use decimal values to fine-tune the settings
- you can adjust character spacing
- you can adjust line spacing
- ...

(see new features 614 to 617 in WINDEV Mobile, which also benefits from these new features).

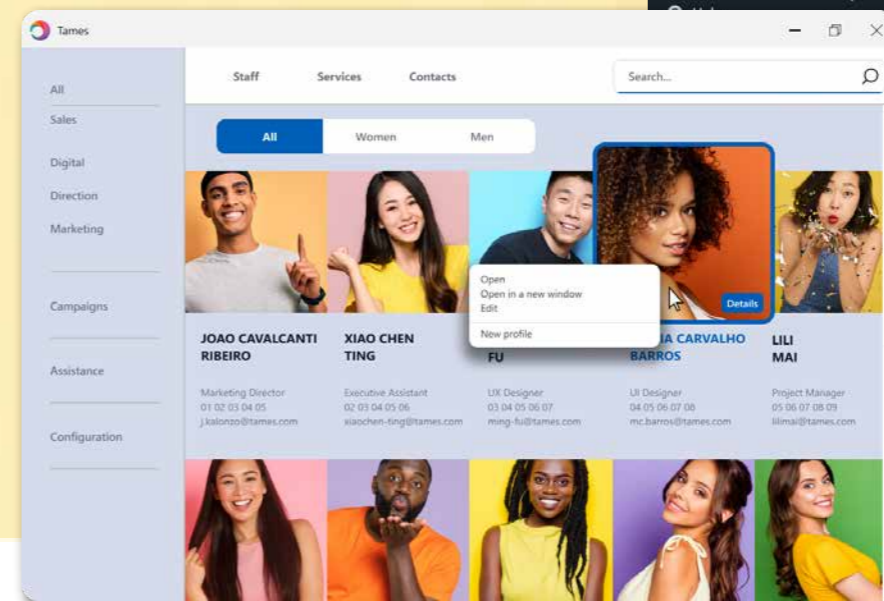
Benefit provided by this new feature of version 27:
Perfect texts...

187 New feature WD WB WM 2 NEW SKIN TEMPLATES FOR WINDEV

The Mika and Mika Dark skin templates are introduced in version 27.

This allows for new customization possibilities.

Benefit provided by this new feature of version 27:
Instant new look!

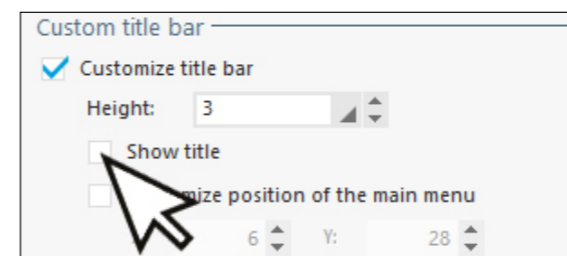


Use these templates in your applications and software packages, as well as all the skin templates provided with WINDEV.

And don't forget: you can also create your own skin templates.

WINDEV includes everything you need to create superb UIs.

188 New feature WD WB WM HIDE THE WINDOW TITLE



Hide the window title with a single click

By default, the window title is displayed in the window's title bar.

In version 27, you can hide the window title.

This can be useful when you use a custom title bar, e.g. if you reduce its height.

Unlike a title that is simply deleted, the window title will

always be known to Windows, and displayed in the taskbar, for example.

Benefit provided by this new feature of version 27:
Advanced customization

189 New feature WD WB WM BUTTON HOVER AND FOCUS

5-state buttons have a "Hover" state and a "Focus" state. In version 27, you can choose which of these 2 states will be used when the user hovers over the control that has focus.

Benefit provided by this new feature of version 27:
Manage specific cases

190 New feature WD WB WM LOOPER: VARIABLE BREAK HEIGHTS

Now you can set different break heights in the same Looper control.

This makes Looper controls more elegant and readable.

Continues page 46...

YOUR APPLICATIONS IN WINDOWS 11

WINDOWS 11



Windows 11 was released in October. In Windows 11, apps adopt a different UI, compared to Windows 10.

191 New feature WD WB WM WINDOWS WITH LIGHT THEME, DARK THEME AND WINDOWS-11 STYLE

In WINDEV 27, you can create windows using the design language of Windows 11. The application can use a light or dark theme.

Benefit provided by this new feature of version 27:
Windows 11 design language

192 New feature WD WB WM PUBLISH YOUR APPLICATIONS TO THE MICROSOFT STORE

The Microsoft Store allows you to publish free or paid applications. Applications developed with WINDEV 27 can be distributed through the Microsoft Store for Windows 11.

Benefit provided by this new feature of version 27:
Large-scale app distribution

193 New feature WD WB WM WINDOWS 11 DESIGN: WHAT CHANGES FOR UIS

Windows 11 offers a new type of UI: rounded window

corners, controls spaced further apart, scrollbars and menus with a different appearance...

The "maximize" button invokes a popup menu. The following new features explore some of these changes.

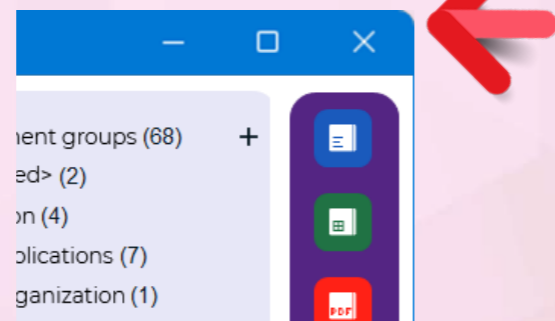
Benefit provided by this new feature of version 27:
Uis are slightly different in Windows 11

194 New feature WD WB WM WINDOWS

The 2 main changes for windows in Windows 11 are

- rounded corners
- the Snap Layouts menu: the Maximize button invokes a menu with a window layout.

In Windows 11, WINDEV application windows have rounded corners by default.



You can avoid displaying these rounded corners by using the clipping feature available in WINDEV. The windows are compatible with the new Snap Layouts menu and its gestures.



Benefit provided by this new feature of version 27:
Organize your windows

195 New feature WD WB WM MARGINS AND SPACING

In Windows 11, there are wider margins between the window border and the content, and controls are further apart. When you use Windows 11 skin templates, your applications adopt the new margin and spacing standards.

Benefit provided by this new feature of version 27:
Some space!

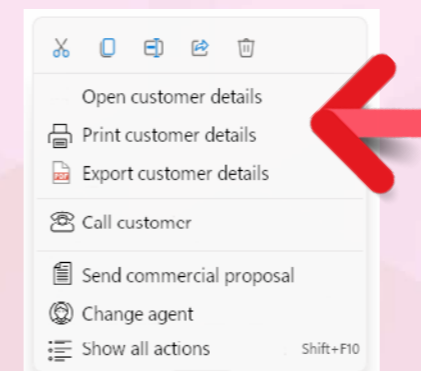
196 New feature WD WB WM WINDOWS 11 MENU

Menus also change in Windows 11.

Just like with controls, spacing has been increased: this takes up more space, but increases readability and makes apps more touchscreen-friendly.

On the visual side, a shadow and an opening animation have been implemented.

The most note-worthy feature is an optional row at the top with small icons for the most common actions.



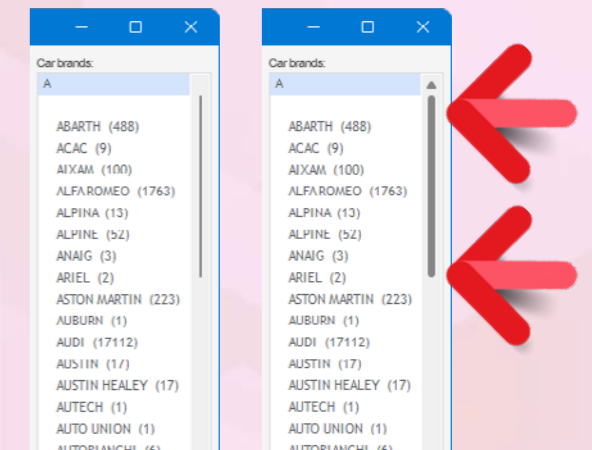
WINDEV 27 allows you to create this type of menu.

Benefit provided by this new feature of version 27:
Modern menus

197 New feature WD WB WM SCROLLBARS

In Windows 11, scrollbars use 2 different aspects depending on whether or not they are in use.

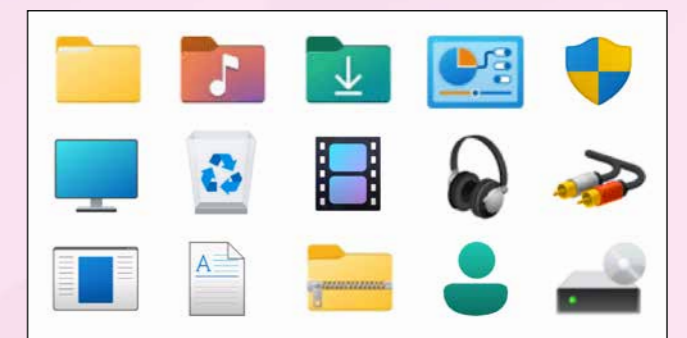
When not in use, the scrollbar has a light appearance. When hovered over, all its details are shown: the scrollbar widens and the up and down arrows appear.



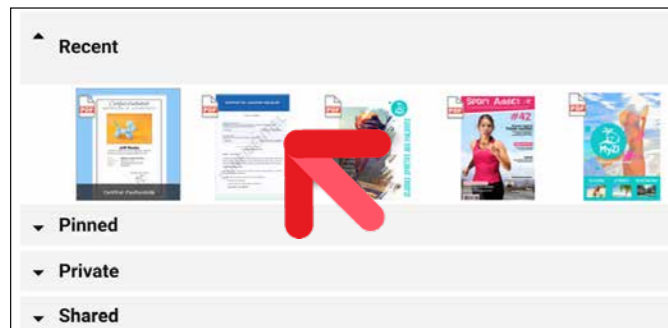
Benefit provided by this new feature of version 27:
Modern, sleek scrollbars

198 New feature WD WB WM NEW ICONS

Icons have also changed in Windows 11. The image catalog provided in WINDEV 27 includes a new set of icons with the Windows 11 design language.



Benefit provided by this new feature of version 27:
New icons available



Benefit provided by this new feature of version 27:
Decide how your breaks should look

HELP IN YOUR APPLICATIONS

199 New feature WD WB WM INCORPORATE LINKS TO VIDEOS IN THE HELP

The help in your applications can now include links to videos. The following are supported:

- links to videos on YouTube
- links to MP4 or WebM video addresses.

HTML help pages can play the video directly in the page. PDF help pages display a clickable thumbnail to open the video in the default browser.

Benefit provided by this new feature of version 27:
End users always find videos useful

WINDEV INSTALL VIA PCSCLOUD

200 New feature WD WB WM INSTALL VIA PCSCLOUD: DOMAIN NAME IN THE LINK

You can store the setup files of your WINDEV applications in the cloud, using PCSCloud.

The default domain name (PCSCloud.net) can be replaced with your own domain name, such as your company's website, for example.

Benefit provided by this new feature of version 27:
Feel like a king with your own domain

201 New feature WD WB WM INSTALL VIA PCSCLOUD: HTTPS BY DEFAULT

As previously mentioned, you can store the setup files of your applications in the cloud, using PCSCloud.

In that case, you share a link with the users so that they can install the application.

In version 27, HTTPS is used by default, which improves security.

Benefit provided by this new feature of version 27:
Secure connection

202 New feature WD WB WM YOUR PRIVATE STORE IN PCSCLOUD

In version 27, you can allow users to install your applications from a Private Store (see new feature 213).

This Store can be hosted in PCSCloud.net: you don't have to manage an additional infrastructure.

An all-in-one solution is available.

Benefit provided by this new feature of version 27:
No additional infrastructure needed

ENVIRONMENT

203 New feature WD WB WM COMMON NEW FEATURES

WINDEV's environment benefits from the common new features (see new features 042 to 057).

Some of the most notable features are the new help and the new alignment options.

Benefit provided by this new feature of version 27:
An ever richer environment

204 New feature WD WB WM UPDATE TEMPLATES: 5X FASTER

In version 27, updating templates in large projects is much faster.

In some cases, up to 5 times faster!

Benefit provided by this new feature of version 27:
A real time saver on big projects

205 New feature WD WB WM REAL-TIME AUDIT DETECTS OBSOLETE TECHNOLOGY

The environment detects and notifies you if there are obsolete technologies in your code, and suggests alternatives.

These obsolete technologies can slow down the editor and

your applications, and even create security risks. See new features 066 to 070

Benefit provided by this new feature of version 27:
Easily improve your applications

206 New feature WD WB WM MISCELLANEOUS

- The quick selection window (Ctrl+E) now includes a larger and more readable window thumbnail.

Benefit provided by this new feature of version 27:
An ever richer environment

WINDOW EDITOR

207 New feature WD WB WM STYLE SHEET, LOCATION OF RESOURCES

Resources used by style sheets, such as images, are often stored in a directory or subdirectory of the style sheet.

Version 27 stores access paths as relative and no longer absolute paths: it is thus easier to copy styles.

Benefit provided by this new feature of version 27:
Easily duplicate styles

RAD

208 New feature WD WB WM RAD: GENERATE CODE WITH PREFIX SYNTAX

The RAD methodology allows you to generate full applications with a few clicks.

In version 27 you can specify that the generated code must use prefix syntax.

Benefit provided by this new feature of version 27:
Choose the format of the code

AAF: AUTOMATIC APPLICATION FEATURES

209 New feature WD WB WM ADAPT THE COLUMN WIDTH TO THE CONTENT VIA THE CONTEXT MENU

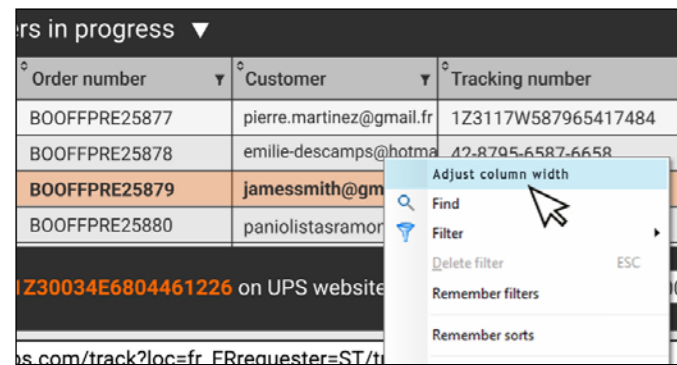
An Automatic Application Feature allows users to adapt the column width to the content: in Microsoft Excel, for example, this is the equivalent of double-clicking the right border of the



Always ready to develop 10 times faster!



column header.
End users can now find this AAF in the context menu of Table controls.



Context menu with the most common AAFs

Benefit provided by this new feature of version 27:
Now your users know

210 New feature WD WB WM UNLOCK COLUMNS:

An application developer can decide to lock a column. In that case, a padlock appears in the column header. A new AAF allows users to unlock this column. This AAF can be disabled by programming.

Benefit provided by this new feature of version 27:
Break the chains

JAVA



211 New feature WD WB WM AGGREGATION FUNCTIONS

In version 27, the **Filter**, **Map** and **Reduce** functions are available in Java.

Benefit provided by this new feature of version 27:
Standardization

212 New feature WD WB WM EXCEPTION: CUSTOMIZE ERROR HANDLING PROCESSES

In version 27, the **Exception** and **Error** functions have been improved and now include many new functions to customize the behavior of the application if an exception or WLanguage error is encountered in your program.

Benefit provided by this new feature of version 27:
Handle errors with more precision

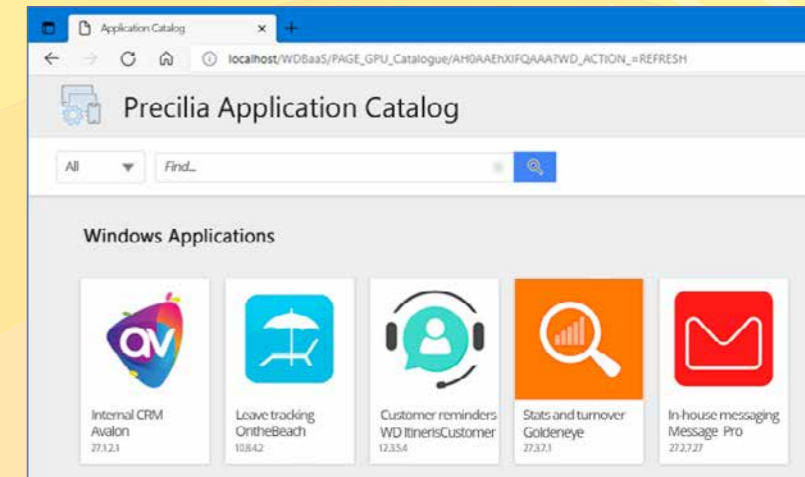
Continues page 50...

WINDEV PRIVATE STORE USERS INSTALL YOUR WINDEV APPLICATIONS FROM YOUR OWN STORE

213 New feature WD WB WM EASILY DISTRIBUTE YOUR SOFTWARE WITHIN AN ORGANIZATION

Version 27 includes a Private Store. This store allows you to group applications used within an organization. The store can be accessed from within the organization only, or be publicly accessible. A portal with optional authentication allows authorized users to install applications. This standardizes and simplifies app distribution within an organization.

Benefit provided by this new feature of version 27:
All the advantages of an app store, within the organization



216 New feature WD WB WM HOW DOES IT WORK FOR THE USERS?

You can provide end users with one of the following:

- the direct link to the application,
- the link to your Store.

If authentication is required, it can be implemented:

- via the User Groupware
- by OAuth (Microsoft, Google, Facebook, etc).

The application is automatically installed on the device: your helpdesk is not burdened with requests, which reduces operating costs.

Benefit provided by this new feature of version 27:
Everything is automatic

217 New feature WD WB WM AUTOMATIC UPDATE

When a new version of an application is installed on the Store, users will automatically be prompted to update the application next time they open it.

Benefit provided by this new feature of version 27:
End users always up to date

218 New feature WD WB WM VERSION HISTORY ON THE SERVER

The version history of each application is kept on the server, which makes it possible to go back to a previous version if necessary.

Benefit provided by this new feature of version 27:
Easy rollback

214 New feature WD WB WM EASY IMPLEMENTATION WITH EXISTING INFRASTRUCTURE

The Store is provided as standard in version 27. Simply install it on a company server, or in the cloud (PCSCloud.net for example). In WINDEV, when creating the installation for the app, select "Private Store". The installation is deployed to the Store server either automatically at the end of the installation generation, or by manually uploading it to the server.

Benefit provided by this new feature of version 27:
Provided as standard, no extra cost

215 New feature WD WB WM PUBLIC APPLICATION, PRIVATE APPLICATION

A store can contain applications accessible both with and without authentication. By logging in to the server with an identifier, users see only the applications they are allowed to install. This makes it possible to keep certain applications "private" and limit their distribution.

Benefit provided by this new feature of version 27:
Advanced application management



Continued from page 48

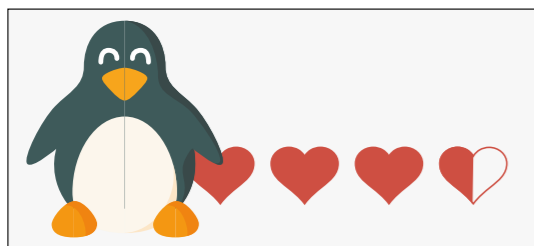
New feature WD WB WM
219 to 241 23 NEW
JAVA FUNCTIONS

WLanguage offers 23 new functions for Java.

Reduce	Apply	StringDeleteDuplicate	StringToNum
ErrorChangeParameter	ErrorPropagate	ErrorReset	ErrorRestoreParameter
ExceptionChangeParameter	ExceptionPropagate	ExceptionRestoreParameter	Filter
OpenAsynchronous	ArrayAddSorted	ArrayDistinct	ArrayIntersect
ArrayUnion	ArrayUnionAll	Map	CheckAllFalse
CheckAllTrue	CheckAnyFalse	CheckAnyTrue	

LINUX

New feature WD WB WM
242 LINUX: RATING CONTROL



In version 27, the Rating control becomes available in Linux.

Benefit provided by this new feature of version 27:
Better cross-platform

New feature WD WB WM
243 LINUX: SSL SUPPORT

In version 27, you can use SSL sockets to send data from WINDEV applications in Linux.

Benefit provided by this new feature of version 27:
Better cross-platform

New feature WD WB WM
244 LINUX: NATIVE PYTHON CALLS

In version 27, native Python script calls are available in Linux.

Benefit provided by this new feature of version 27:
Better cross-platform

New feature WD WB WM

245 to 296 52 NEW FUNCTIONS
 123 NEW LINUX CON-
 STANTS FOR WINDEV

WLanguage offers 52 new functions and 123 new constants (seen online help) for Linux.

StringDeleteDuplicate	StringToNum	Compare	CompareAscendingOrder
CompareDescendingOrder	dBlur	EmailExportHTML	geoGetAddress
grRBAAddData	grRBRotationDirection	grRBMMaximumValue	HClusterMasterNode
HTMLUnwrapAllChildren	HTMLWrap	HTMLWrapAllChildren	HTMLInsertAfter
HTMLInsertBefore	HTMLInsertLastChild	HTMLInsertFirstChild	HTMLModifyAttribute
HTMLRemove	HTMLRemoveAttribute	HTMLRemoveChild	HTransactionSavepoint
HTransactionRollbackToSavepoint	AIDetect	AIDetectModel	JSONToXML
LuhnCalculate	LuhnCheck	PDFAddWatermark	PDFAddImage
PDFNbSignatures	PDFGetSignatureDate	PDFGetSignature	PythonAddPath
PythonInitialize	PythonTerminate	PythonExecute	RedisSet
RedisGet	RegexSearch	RegexReplace	SocketConnectSSL
DeleteParameter	TestAddIteration	TestWriteResult	TestCheck
WebserviceWriteCustomHTTPCode	WebSocketClientConnect	WebSocketClientConnectSSL	XMLToJson

.NET

New feature WD WB WM
297 .NET 5 SUPPORT

WINDEV 27 supports .NET 5.

Benefit provided by this new feature of version 27:
All versions supported

WLANGUAGE WL

New feature WD WB WM
298 COMMON NEW FEATURES

Language remains the cornerstone of development.

In version 27, WLanguage in WINDEV is further enriched. It benefits from common new features and many useful improvements: AI object detection, named parameters of the **Open** function, new syntax, new compilation directives ... See new features 104 to 126.

Benefit provided by this new feature of version 27:
Ever-increasing power in WLanguage

New feature WD WB WM
299 NATIVE SCAN FUNCTION
 (BETTER THAN TWAIN!)

Many scanners no longer provide a Twain interface to communicate with the scanner through programming. WINDEV and WEBDEV Server 27 introduce a new type and new WLanguage functions to natively manage scanners through programming.

The **Scanner** type defines the scanner to be used. You can define multiple **Scanner** variables in a program to use different scanners in parallel.

ScanSelect, a new WLanguage function, opens the scanner selection window of the system. The scan can be started through programming or by opening the specific driver settings window.

```
MyScanner is Scanner = ScanSelect()
// Scan all the pages in the feeder into a PDF file
MyScanner.ToPDF("PDFFile.PDF")
```

Benefit provided by this new feature of version 27:
Universal programming

New feature WD WB WM
300 QR CODE DECODING: SUPPORT FOR
 CHINESE, KOREAN AND OTHER
 CHARSETS

In version 27, QR Code decoding supports new charsets:

- windows-1250 (Eastern Europe)
- windows-1251 (Cyrillic)
- windows-1256 (Turkish)
- UTF-8
- US-ASCII
- BIG5 (traditional Chinese)
- GB1830 (simplified Chinese)
- EUC-KR (Korean).



Benefit provided by this new feature of version 27:
વિન્ડેવ મહાન છે



301 New feature WD WB WM AWESOME NOTIFICATIONS WINDOWS (10 & 11)



A notification is a small window that appears at the bottom right of the screen, and that can be viewed at any time in the Windows notification area. This type of window has been standardized by Windows (using XML).

In version 27, you can easily create beautiful notifications to be displayed in Windows 10 and 11.

A notification can contain:

- images
- text
- edit controls
- buttons
- combo boxes.

To create these notifications, simply use the new `sysNotification`, `sysNotificationButton` and `sysNotificationInput` WLanguage types.

You set a time, an alarm or a reminder, ...

These notifications are clickable.

You can still create the XML document required to display and manage the notification.

Benefit provided by this new feature of version 27:
Feature-rich, yet easy notifications

302 New feature WD WB WM OPENDOCUMENTASYNCHRONOUS: OPEN MULTIPLE DOCUMENTS SIMULTANEOUSLY

Opening documents asynchronously allows you to open one or multiple documents without blocking the application. End users can continue to use the application without having to close the document(s).

Benefit provided by this new feature of version 27:
Simultaneity

303 New feature WD WB WM MODERNIZED UI FOR SELF- EXTRACTING EXECUTABLES

WINDEV has always allowed developers to create self-extracting executables.

In version 27, the progress bar displayed during the extraction gets a welcome facelift.

Benefit provided by this new feature of version 27:
A refreshing look

304 New feature WD WB WM RETSSEND: NEW SYNTAX

To make writing cross-platform code easier, the syntax of the `RETSend` function with callbacks is now the same in WINDEV and WEBDEV.

Benefit provided by this new feature of version 27:
Easier cross-platform programming

305 New feature WD WB WM CLIENT WEBSOCKETS

`WebSocketXXX` functions are available in WINDEV.

This allows your applications to easily communicate with a WebSocket server, created with WEBDEV or with another development environment.

Benefit provided by this new feature of version 27:
Useful, easily-accessible technology

306 New feature WD WB WM SIGN EXECUTABLES USING SHA-256



Some certificate providers require the use of SHA-256. The `CertificateSignExecutable` WLanguage function accepts certificates that only use SHA-256.

Benefit provided by this new feature of version 27:
Increased security

307 New feature WD WB WM GEOGETADDRESS

In version 27, the `GeoGetAddress` function is available in WINDEV.

This function returns the address of a (known) location passed as parameter.

Benefit provided by this new feature of version 27:
One more function for WINDEV!

New feature WD WB WM 308 to 479 172 NEW CONSTANTS

172 new WLanguage constants are available in version 27:

dispWithCoverPage	dispEnableScrolling	dispDefault	dispTwoPage
dispSinglePage	apiInt_1	apiInt_2	apiUnsignedInt_1
apiUnsignedInt_2	Redaction	dbgElementShortName	errCallingProcess
exeSansHeritageHandle	aaPDFDeleteCurrentPage	Blur	gpwFullDetails
grRadialBar	grToolTipFormatRadialBar	grColumnHorizontal	grColumnHorizontalStacked
grAnticlockwise	grClockwise	hEncryptionAES192	hEncryptionAES256
aidAirplane	aidSportsBall	aidBanana	aidBench
aidBoat	aidBaseballBat	aidBowl	aidFireHydrant
aidBottle	aidBroccoli	aidToothbrush	aidBus
aidTruck	aidSofa	aidCarrot	
aidChair	aidCat	aidHorse	aidDog
aidScissors	aidKeyboard	aidKnife	aidTie
aidSpoon	aidDonut	aidTv	aidElephant
aidSink	aidTrafficLight	aidOven	aidFork
aidFrisbee	aidBaseballGlove	aidCake	aidGiraffe
aidToaster	aidClock	aidHotdog	aidBed
aidBook	aidMicrowave	aidLicensePlateModel	aidFaceModel
aidYoloModel	aidMotorbike	aidSheep	aidBird

aidOrange	aidLaptop	aidBear	aidTeddyBear
aidStopSign	aidUmbrella	aidParkingMeter	aidPerson
aidPizza	aidSurfboard	aidPottedPlant	aidLicensePlate
aidApple	aidTennisRacket	aidRefrigerator	aidBackpack
aidHandbag	aidSandwich	aidHairDryer	aidSkateboard
aidSkis	aidSnowboard	aidMouse	aidDiningTable
aidCup	aidRemote	aidCellphone	aidToilet
aidTrain	aidCow	aidSuitcase	aidVase
aidBicycle	aidWineGlass	aidFace	aidCar
aidZebra	iPDFGrayscale	pdfColor	pdfGrayscale
popAlignedRight	popAlignedLeft	popAbove	popCenteredWindow
popCenteredHorizontally	popDefault	popDisableAutoRepositioning	popBelow
popAccordingToControl	registryMode32	registryMode64	registryModeAuto
scanBitsPerPixelDefault	scanBrightnessDefault	scanContrastDefault	scanFromAuto
scanFromFeeder	scanFromFlatBed	scanColorFormatAuto	scanColorFormatGrayscale
scanColorFormatBlackWhite	scanColorFormatRGB	scanHeightDefault	scanWidthDefault
scanNumberPagesAll	scanDuplexDefault	scanDuplexNo	scanDuplexYes
scanResolutionDefault	scanUIOptionDefault	scanUIOptionSystem	scanUIOptionSingleImage
SocketError	SocketClosing	SocketMessage	SocketOpening
sysNotifAlarm	sysNotifCall	sysNotifNoCrop	sysNotifContextButton
sysNotifCloseButton	sysNotifStandardButton	sysNotifReminderButton	sysNotifCircleCrop
sysNotifInputCombo	sysNotifInputText	sysNotifStandard	sysNotifReminder
trtStartScrolling	trtStopScrolling	typDiagramEditor	uriCreate
uriOpen	wlSecurePassword	zoomFitVisible	zoomDefault
zoomFullPage	zoomFullHeight	zoomFullWidth	zoomActualSize

Benefit provided by this new feature of version 27:
More and more possibilities for WLanguage

New feature WD WB WM 480 to 498 19 NEW TYPES

19 new types of variables are available in WLanguage:

btleCharacteristic	btleDescriptor	btleDevice	btleService
diagShape	diagGroup	diagOval	diagPoint
diagPolygon	Diagram	diagRectangle	iaNeuronNetworkModel
ailmageResult	JSONXMLConverter	pdfParameter	Scanner
sysNotification	sysNotificationButton	sysNotificationInput	

Benefit provided by this new feature of version 27:
More and more power for WLanguage

New feature WD WB WM 499 4 NEW PROPERTIES

4 new WLanguage properties are available for WINDEV.

Clickable	Pinned	HideWhileScrolling	Hidden
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Benefit provided by this new feature of version 27:
And even more power for WLanguage!

New feature WD WB WM 500 to 587 88 NEW WLANGUAGE FUNC- TIONS FOR WINDEV

88 new WLanguage functions are available for WINDEV in version 27:

Each update to version 27 entitles you to 15 free technical support requests at PC SOFT.

In version 27, your teams benefit from Free Technical Support*!

NO WORRIES...

(*during the release period of the version. Call charges may apply).

WriteValue	Writes a value to a characteristic on a Bluetooth Low Energy (BLE) device
BTLECharacteristicReadValue	Reads the value of a characteristic on a BLE device
BTLEDisconnect	Used to disconnect from a BLE device
BTLEDescriptorWriteValue	Writes the value of a descriptor to a BLE device.
BTLEDescriptorReadValue	Reads the value of a descriptor on a BLE device.
BTLEConnectionStatus	Returns the current status of the connection to a Bluetooth Low Energy device or asks to be notified when the connection status changes.
BTLEInitialize	Initializes Bluetooth Low Energy.
BTLEInitializeDevice	Initializes a Bluetooth Low Energy device in Windows.
BTLEListDevice	Returns the list of accessible Bluetooth Low Energy devices.
BTLEGetAllServices	Retrieves all the services corresponding to a UUID.
BTLEGetAllCharacteristics	Retrieves all the characteristics (with the same identifier) associated with a BLE service.
BTLEGetADescriptor	Retrieves the descriptor of a Bluetooth Low Energy characteristic corresponding to the specified identifier (UUID).
BTLEGetACharacteristic	Retrieves the characteristic of a Bluetooth Low Energy service corresponding to the specified identifier (UUID).
BTLEGetAService	Retrieves the service of a Bluetooth Low Energy device corresponding to the specified identifier (UUID).
StringDeleteDuplicate	Removes duplicates among substrings of a string, based on one or more separators.
StringToNum	Returns the numeric value of a character string. This feature enables you to perform numeric calculations on strings.
Compare	Compares a member between two objects.
CompareAscendingOrder	Performs a comparison in ascending order on a member between two objects.
CompareDescendingOrder	Performs a comparison in descending order on a member between two objects.
dBlur	Blurs an image or an area of an image.
DiagramLoad	Loads a diagram in the Diagram Editor control.
DiagramPresetShapeAdd	Adds preset shapes in the action bar of the Diagram Editor control.
DiagramPresetShapeDeleteAll	Deletes all preset shapes from the action bar of the Diagram Editor control.
DiagramPrint	Prints the contents of a Diagram control
DiagramSave	Saves a diagram in the Diagram Editor control.
DiagramSelect	Selects a shape in a Diagram Editor control.
DiagramSelectMinus	Removes a shape from the selection in a Diagram Editor control.
DiagramSelectPlus	Adds a shape to the selection in a Diagram Editor control.
DiagramToImage	Saves a diagram to an image.
DiagramToSVG	Saves a diagram to an SVG file.
EmailExportHTML	Exports the HTML code of an email to display it in an HTML control, extracts the images and stores them on the disk.
InSysNotificationMode	Determines if the application is launched from a "Windows 10" interactive notification.
geoGetAddress	Retrieves an address or a list of addresses corresponding to the description of a geographic location.
grRBAAddData	Adds data to a Radial Bar chart.
grRBRotationDirection	Sets the rotation direction in a Radial Bar chart.
grRBMaximumValue	Sets the maximum value in a Radial Bar chart.
HClusterMasterNode	Identifies the master node in a cluster
HTMLEnableDebugger	Enables the HTML/JavaScript debugger on CEF-based HTML controls: HTML Display or HTML Editor control.
HTMLUnwrapAllChildren	Deletes the specified node in an HTML document without deleting its children, which take its place.
HTMLWrap	Wraps the specified node in a given node of an HTML document.
HTMLWrapAllChildren	Wraps all children of the given node in a new node in an HTML document.
HTMLInsertAfter	Adds a node after the specified node in an HTML document
HTMLInsertBefore	Adds a node before the specified node in an HTML document

HTMLInsertLastChild	Adds a child after the child of the current node in an HTML document
HTMLInsertFirstChild	Adds a child at the start of the children of the current node in an HTML document.
HTMLModifyAttribute	Adds or changes an attribute of the current node of the HTML document
HTMLRemove	Removes the specified node and its descendants in an HTML document.
HTMLRemoveAttribute	Removes a given attribute
HTMLRemoveChild	Removes a given node in the current node of an HTML document.
HTransactionSavepoint	Defines a transaction savepoint
HTransactionRollbackToSavepoint	Rolls a transaction back to the savepoint
AIDetect	Detects different elements in an image: object, faces, etc, ...
AIDetectModel	Runs a trained neural network model on an image.
JSONToXML	Converts a JSON string to XML.
LuhnCalculate	Calculates the next Luhn check digit for a given sequence.
LuhnCheck	Checks that the given sequence is valid according to the Luhn formula.
OpenAsynchronous	Opens a window whose result will be retrieved via a WLanguage procedure.
OpenDocumentAsynchronous	Opens a document using the appropriate editor
OpenPopupAsynchronous	Opens a popup window whose result will be retrieved via a WLanguage procedure.
PDFAddWatermark	Adds a watermark to all or some pages of an existing PDF file.
PDFAddImage	Adds an image to a page in an existing PDF file.
PDFNbSignatures	Gets the number of signatures in a PDF document.
PDFGetSignatureDate	Gets the date of a signature in a PDF document.
PDFGetSignature	Gets the signature in a PDF document.
PythonAddPath	Adds an import path for Python modules.
PythonInitialize	Specifies the location of the Python DLL to be loaded.
PythonTerminate	Unloads the Python DLL and frees memory.
PythonExecute	Executes a function present in a Python module.
RedisSet	Assigns a value to a key on a Redis server.
RedisGet	Gets the value of a key present on a Redis server.
RegexSearch	Searches for all the parts of a string that follow a specific format.
RegexReplace	Replaces all the parts of a string that follow a specific format.
ScanWithUserInterface	Saves a document from a scanner as one or multiple files, using the scanner's user interface.
ScanList	Lists the scanners connected to the current computer.
ScanProperty	Gets and changes the properties of a scanner
ScanGet	Gets the details of a scanner.
ScanSelect	Opens a standard dialog box with the available scanners.
ScanToImage	Retrieves a document from a scanner in a variable of type Image.
ScanToPDF	Saves a document from a scanner to a PDF file.
SysNotificationCompatible	Checks if the operating system supports interactive notifications.
SysNotificationSend	Sends an interactive notification to the system in order to be displayed.
SysNotificationRemove	Removes a previously sent interactive notification.
SysNotificationRemoveID	Removes all previously sent interactive notifications that match the specified identifier (ID).
SysNotificationClear	Removes all interactive notifications previously sent by the current application.
WebserviceWriteCustomHTTPCode	Specifies the HTTP code that will be returned at the end of the current REST webservice call.
WebSocketClientConnect	Connects to a WebSocket server
WebSocketClientConnectSSL	Connects to a secure WebSocket server.
XMLToJSON	Converts an XML string to JSON.

WINDEV Mobile



My source

588 New feature **WD WB WM**
WINDEV MOBILE 27 BENEFIT FROM THE 169 COMMON NEW FEATURES OF VERSION 27



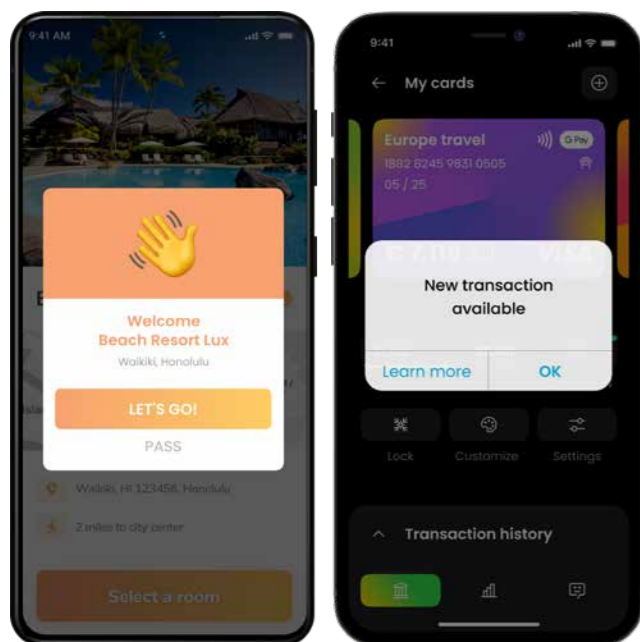
WINDEV Mobile benefits from most of the 169 common new features in version 27, and in particular: new Smart controls, higher speeds, new controls, improved PDF control, detection of obsolete technology in the code, richer code editor, improved Project Monitoring Center, secure passwords in HFSQL, new features in WLanguage, etc.

Of course, WINDEV Mobile 27 also benefits from many new features specific to the mobile world. Learn more in the following pages.

NEW CONTROLS

WINDEV Mobile 27 includes new types of controls, to create even richer UIs.

589 New feature WD WB WM NEW POPUP WINDOW



2 examples of popup windows

A popup is a non-maximized window that opens over the current window.
A popup can contain all available types of controls in WINDEV Mobile.
A popup closes automatically as soon as the user taps outside it.
In version 27, creating popups is very easy.
A popup is a window: Simply select "Popup window" in the window creation wizard.

Benefit provided by this new feature of version 27:
Create standard popups without coding!

590 New feature WD WB WM POPUP PROGRAMMING

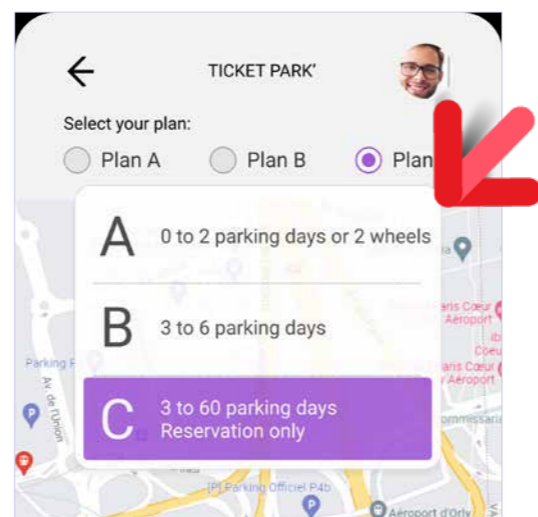
Programming popups is very intuitive.
Open popups with the `OpenPopupAsynchronous` WLanguage function.

You can pass parameters when the popup is opened, and specify a callback to retrieve return values when it is closed.

Benefit provided by this new feature of version 27:
Intuitive programming

591 New feature WD WB WM POPUP: IMPLEMENTATION EXAMPLE

Popup windows can be used in many ways.
A common use case is to create help messages for a given control: a custom context menu, alert, legends ...



A popup displayed on a map

Benefit provided by this new feature of version 27:
Your ideas really pop up

592 New feature WD WB WM NEW TREEVIEW TABLE CONTROL

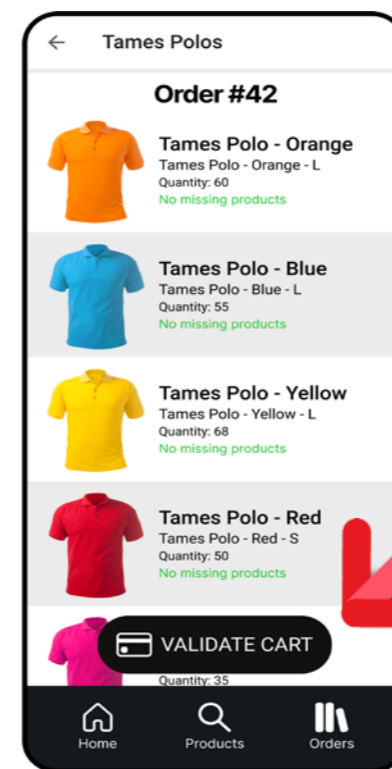
Category	Code	Description	AVAIL	LOW	BREAK
Stay	LIFE	Living room	●		
Kitchen	COOK	Kitchen furniture	●		
Office	WORK	Office, hobbies		●	
Lighting/Lamp	LIGHT	Lamps and office lighting			●
Chairs	CHAIRS	Office chairs, armchairs	●		
Storage	STORAGE	Built-in storage		●	
Furniture	FURNITURE	Specific furniture		●	

A TreeView Table

The TreeView Table control is now available in WINDEV Mobile.
Programming is the same as in WINDEV.
Now, you can automatically display data in a tree view layout on mobile devices, using this new control.
The icon of the nodes and leaves can be customized for each row.
Don't forget that a TreeView Table can also contain non-hierarchical columns.

Benefit provided by this new feature of version 27:
A useful control

593 New feature WD WB WM PIN ONE OR MORE CONTROLS ON THE SCREEN, WHEREVER YOU WANT



The button at the bottom of the screen is pinned

In version 27, you can pin one or more controls (buttons, mainly) to a fixed position on the screen.

For example:

- bottom right
- bottom center
- ...

The margins in relation to the screen edges are those defined when positioning the control.

An option in the 7-tab window allows you to hide the control when the parent window is scrolled.

Benefit provided by this new feature of version 27:
Useful addition to modernize your UIs!

5 NEW SMART CONTROLS IN WINDEV MOBILE 27

594 New feature WD WB WM 5 NEW SMART CONTROLS IN WINDEV MOBILE 27

New Smart controls are available in WINDEV Mobile 27:

- Tokenized e-mail input
- Form with non-blocking required input
- Tokens as filters, with horizontal scrolling
- Floating action button
- Camera

Continues page 60...

WEBSOCKET



595 New feature WD WB WM WEBSOCKET CLIENT ON MOBILE: USEFUL REAL-TIME APPLICATIONS

WebSockets allow for a real-time, bi-directional data exchange between a smartphone or tablet and a server.
This facilitates the development of instant messaging applications, and more generally, makes it possible to send data from a server to a mobile device.

Benefit provided by this new feature of version 27:
Powerful real-time apps

596 New feature WD WB WM WEBSOCKET CLIENT ON MOBILE: CALL A WEBSOCKET SERVER FROM A MOBILE APP

The `WebSocket` WLanguage functions are now available for mobile applications in Android and iOS.
Therefore, this family of functions is available in WINDEV, WEBDEV and WINDEV Mobile.

It is now possible to connect to WEBDEV's standard WebSocket server, and to any other WebSocket server.

Benefit provided by this new feature of version 27:
Fast two-way communication

INTEGRATE PHOTO AND VIDEO CAPTURE INTO YOUR APPLICATIONS

THE NEW CAMERA CONTROL

597 New feature WD WB WM WHY A CAMERA CONTROL?

All mobile devices that have a lens and can take photos or videos already have a camera app. So why include this new Camera control? Simply so that you can do the processing you want without the end user having to leave the application. With the Camera control, you can add buttons, captions and input fields; start processes automatically without leaving the application, without additional actions, just like in a standard window:

- send photos to the right folder with a single click
- archive photos in a customer's HFSQL file
- make an inventory of fixtures, and send it directly by email
- Perform OCR on a text and process the text programmatically, for example, to prepare the content of an email or to search in a database
- perform automatic image recognition via an AI web service
- show the nutritional information of a product by scanning its bar code
- ...

Benefit provided by this new feature of version 27:
Photos and videos...

598 New feature WD WB WM NEW CAMERA CONTROL

A new "Camera" control is introduced in WINDEV Mobile 27. The Camera control is used to:

- take photos
- record videos
- scan and decode bar codes

This control is very powerful, and has a wide range of settings. A dedicated Smart control has been included in WINDEV Mobile 27 to easily implement all the functionalities of the new Camera control.

Benefit provided by this new feature of version 27:
A new useful control

599 New feature WD WB WM MAIN FEATURES

The Camera Smart control, based on the new Camera control, boasts many features and includes everything end users expect:

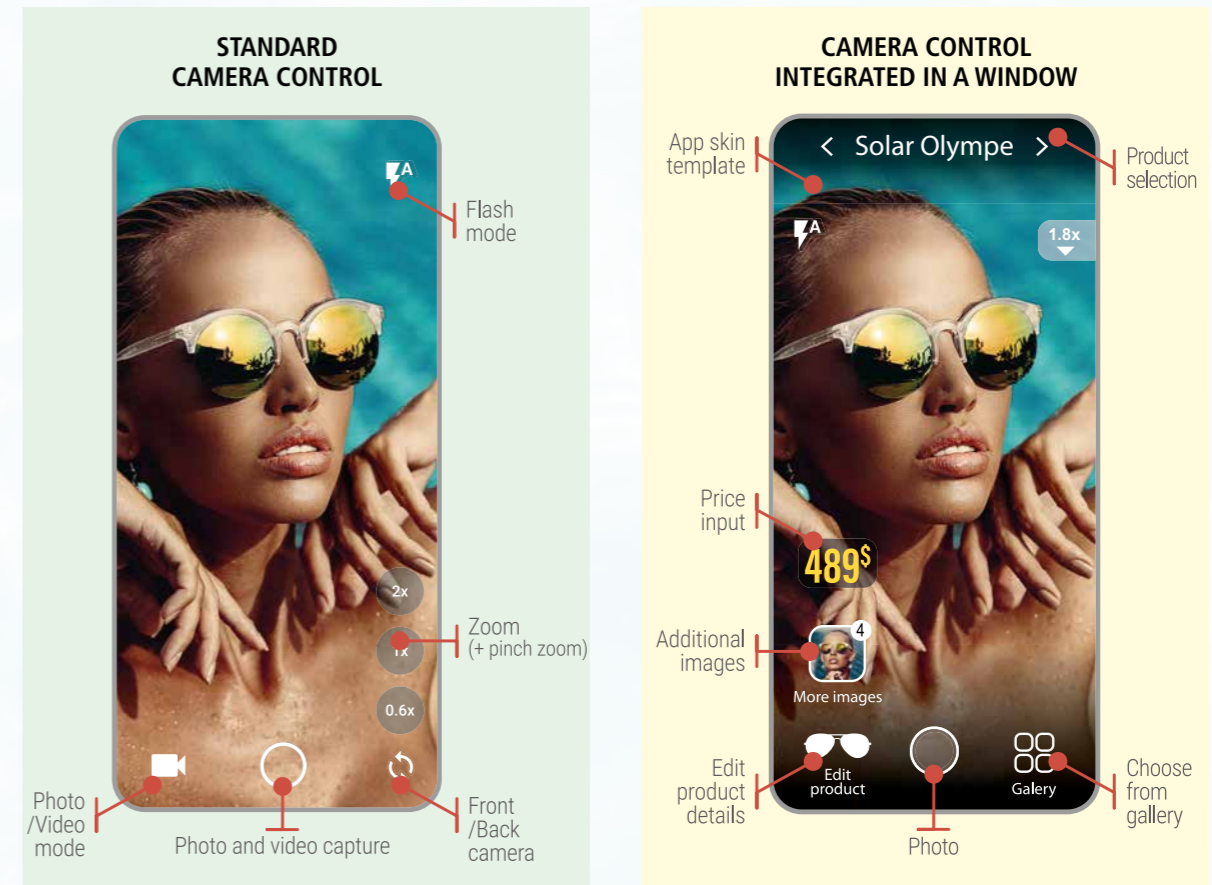
- Different display modes: homothetic, extended,...
- Pinch zoom (or zoom defined programmatically)
- Touch to focus (or focus set programmatically)
- Flash and torch
- Front/back camera
- ...



"RENTAL CAR CHECK" APP.

Before rental, the car hire company agent takes a series of photos to have a record of the state of the vehicle: it's better than making crosses on a car drawing on paper. Everything can be done in this window.

CAMERA SMART CONTROL FUNCTIONALITIES



Everything can be edited: icons and their location, for example. You can add as many controls as you want, of any type, anywhere, next to or directly on the control. You can run any desired process, as in any WINDEV Mobile window.

All these features are also available through programming. Your application has full control on the Camera control.

Benefit provided by this new feature of version 27:
A feature-rich control

- `..Torch`
- `..Zoom`
- `..WorkingDirectory`
- ...

These properties allow you to easily manipulate the control through programming.

Benefit provided by this new feature of version 27:
Easier programming

600 New feature WD WB WM NEW CAMERA WLANGUAGE FUNCTIONS

The Camera control management functions have now been unified in WLanguage: this new function family is identified by the `Camera` prefix.

Of course, the old `Video` functions are still supported.

Benefit provided by this new feature of version 27:
Intuitive programming

601 New feature WD WB WM NEW WLANGUAGE PROPERTIES OF THE CAMERA CONTROL

WLanguage includes new properties to make programming easier:

- `..Camera (front, back)`
- `..Flash`

602 New feature WD WB WM ADD PROCESSES TO PHOTO AND VIDEO CAPTURE

The Camera control is fully customizable. Since it is a control, it can be used in a window with other controls.

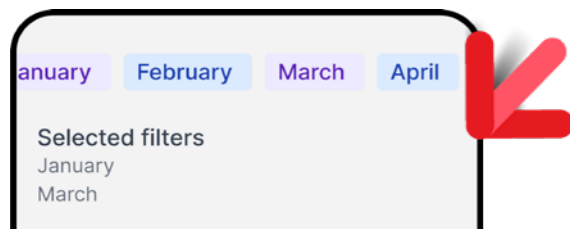
For example, the developer can create preset buttons such as "Move to folder", "Encrypt", "Send OCR result in message body" or "Run image recognition",...

Benefit provided by this new feature of version 27:
Total UI customization

Benefit provided by this new feature of version 27:
Create windows in less time

603 New feature WD WB WM
**NEW SMART CONTROL
FILTER TOKEN**

The "Token filter" control displays a series of tokens in a horizontal layout, and allows scrolling and selecting multiple elements.



Standard UI behavior

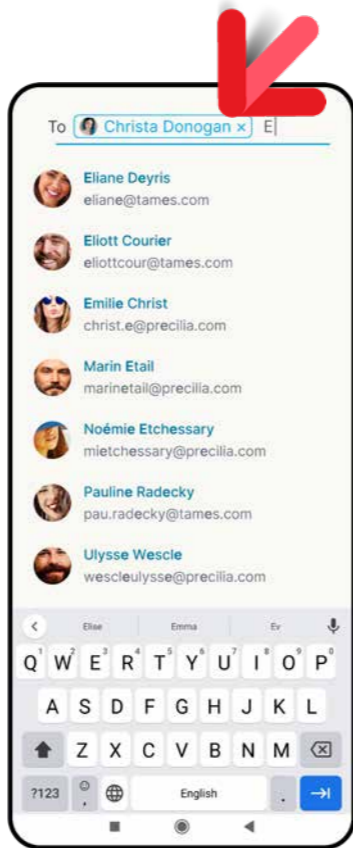
Benefit provided by this new feature of version 27:
A modern, widespread UI

604 New feature WD WB WM
**NEW SMART CONTROL
EMAIL ADDRESS INPUT WITH
TOKENS**

The "Tokenized email address input" Smart control (see new feature 174) is also available for mobile applications. The layout has been adapted for easy use on mobile devices.

605 New feature WD WB WM
**NEW SMART CONTROL:
NON-BLOCKING REQUIRED INPUT**

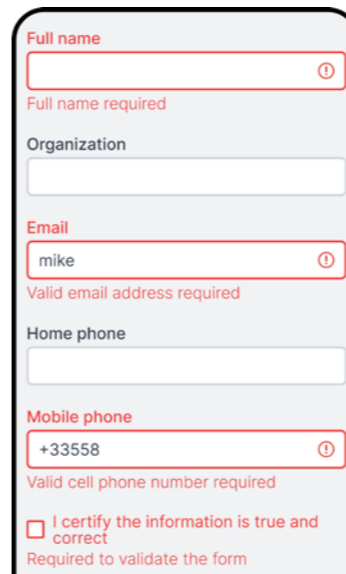
The "Non-blocking required input" Smart control (see new



Each selected recipient appears as a token

Benefit provided by this new feature of version 27:
Modern UI

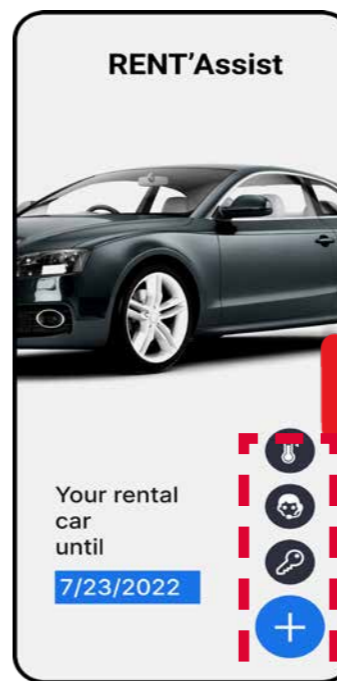
feature 173) is also available for mobile devices. It allows a less restrictive experience for the end user, while ensuring data validity.



Each field that does not meet the requirements is highlighted in red

Benefit provided by this new feature of version 27:
Avoid invalid data, zero lines of code needed

607 New feature WD WB WM
**NEW SMART CONTROL
FLOATING ACTION BUTTON**



Sophisticated UIs made easy

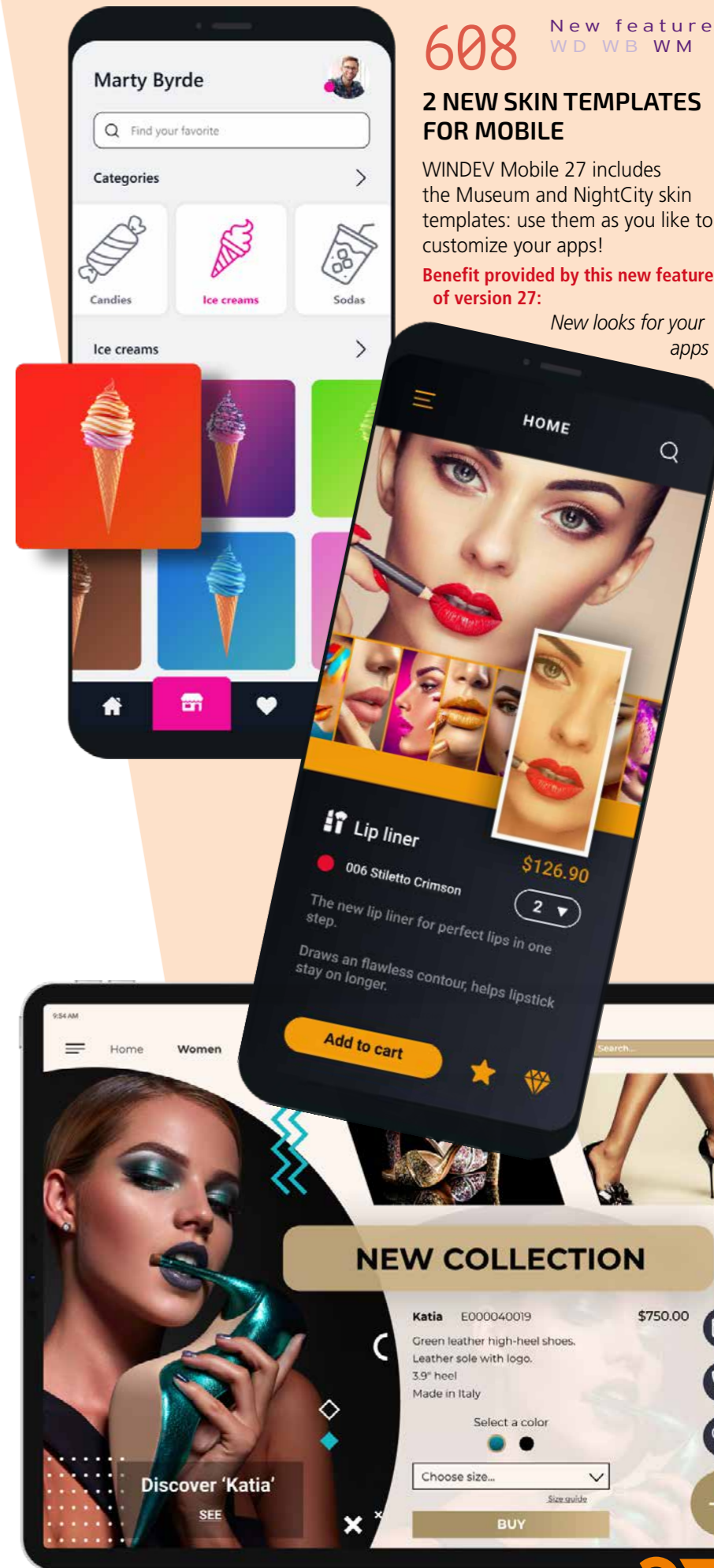
The "Floating Action Button" Smart control is a pinned button, which, when pressed, displays a list of related actions as buttons.

608 New feature WD WB WM
**2 NEW SKIN TEMPLATES
FOR MOBILE**

WINDEV Mobile 27 includes the Museum and NightCity skin templates: use them as you like to customize your apps!

Benefit provided by this new feature of version 27:

New looks for your apps



**TRANSFORM YOUR WINDEV APPLICATIONS
INTO IOS & ANDROID APPS: EASIER THAN EVER**

WINDEV APPLICATION



WINDEV MOBILE APPLICATION

606 New feature WD WB WM
**TRANSITION TO MOBILE DEVICES
MADE EASIER**

Transforming your existing WINDEV applications (or parts of applications) into iOS and Android applications is easier than ever before.

The new **OpenAsynchronous** WLanguage function allows for even better compatibility. The integration of the WINDEV and WINDEV Mobile environments allows developers to easily share project elements. The conversion wizard has been improved and is even more precise.

Benefit provided by this new feature of version 27:
Easily transform your WINDEV applications into mobile applications

The location of the related action buttons can be customized, as in any Smart control.

Benefit provided by this new feature of version 27:
A modern, popular UI behavior

609 New feature WD WB WM NEW SMART CONTROL CAMERA

The "Camera" Smart control integrates the features of the new WINDEV Mobile Camera control. See new features 597 to 602.

Benefit provided by this new feature of version 27:
Integrate photo and video capture into your apps

WINDEV MOBILE IN WINDEV EDITOR

610 WD WB WM REMINDER: WINDEV OPENS AND HANDLES WINDEV MOBILE PROJECTS

To make cross-platform development easier, WINDEV can open WINDEV Mobile projects (and WEBDEV projects as well). This avoids duplicating code and objects and performing unnecessary operations. Objects are shared immediately. The same project in WINDEV can contain WINDEV, iOS and Android configurations (and even WEBDEV configurations). In edit mode, you can seamlessly switch from one configuration to another.

Note: it is of course necessary to have a WINDEV Mobile (and/or WEBDEV) license.

Benefit provided by this new feature of version 27:
It makes everything easier

NEW IOS/ANDROID COMMON FEATURES

611 New feature WD WB WM OPENASYNCHRONOUS: OPEN FUNCTION WITH CALLBACK ALLOWS FOR MORE LINEAR CODE

The `OpenAsynchronous` function has just been added to

WLanguage.
With this new method, you can effortlessly open mobile windows.
Simply pass 3 elements:

- window name
- parameters, if needed: client identifier...
- callback to be called when the window is closed.

The advantage of this syntax is the ability to write linear code, and open windows without blocking the app.
The window closing code is just below the opening code.
It is no longer necessary to write this code in the "Close child window" process.

```
WIN_DateSelect.OpenAsynchronous(CloseDateSelect)

INTERNAL PROCEDURE CloseDateSelect (SelectedDate)
    EDT_Date = SelectedDate
END
```

Linear code

Benefit provided by this new feature of version 27:
More readable code

612 New feature WD WB WM PRIVATE STORE: SETUP WITHOUT AUTHENTICATION

As you know, WINDEV Mobile comes with a Private Store (Mobile Device Management solution) that allows you to deploy your apps without having to go through a store. In version 27, you can specify that an app is "public" and therefore does not require authentication to be downloaded. This can be useful in an Intranet for example, or to publish demo versions.

Benefit provided by this new feature of version 27:
Simplification

613 New feature WD WB WM PRIVATE STORE: NEW AUTHENTICATION POSSIBILITIES

In version 27, the Private Store is enriched with options from the User Groupware.
You can specify which users and groups of users can install an application.

Benefit provided by this new feature of version 27:
Additional security for sensitive applications

Continues page 64...

SOPHISTICATED TEXT ADJUSTMENTS

614 New feature WD WB WM FONT SIZE: ADDITIONAL UNITS FOR MORE CONTROL

In version 27, you can use new units to set the font size in controls for mobile devices: control labels and characters entered, icons, buttons, combo boxes...

The available units are:

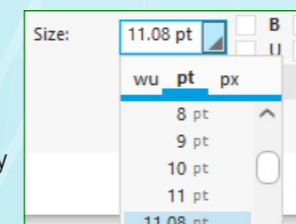
- legacy unit (uw)
- point (pt)
- logical pixel (px).

Decimal values are supported (2 digits after the decimal point). These units allow you to precisely define any size.

UIs can be more finely tuned.

If no unit is specified, the legacy unit will be used by default.

Benefit provided by this new feature of version 27:
Sometimes, size matters



616 New feature WD WB WM ADJUST LINE SPACING

Line spacing defines the space between 2 lines.
In version 27, you can finely adjust line spacing in a text, by choosing the unit, and specifying two decimals if necessary.

Benefit provided by this new feature of version 27:
Precise line spacing...

617 New feature WD WB WM UI: GREATER TEXT CUSTOMIZATION

Using these three new features:

- font size unit
- character spacing
- line spacing

now you have total control over text and text layouts.

Benefit provided by this new feature of version 27:
Elegant, reader-friendly text

615 New feature WD WB WM ADJUST CHARACTER SPACING

Character spacing determines how far apart characters are from each other.

In version 27, you can adjust character spacing: control label, input text,...

This allows you to condense or expand text without changing the font.

Flying cars right around the corner?

Text with standard character spacing (100%)

Flying cars right around the corner?

Text with character spacing set to 130%

Benefit of this new feature in version 27:
Condense, expand...

3 variations of the same text

Precision up to two decimal places

ARTICLE PREVIEW

Validate article

Flying cars right around the corner?

Inspired by nature, engineered by man and evolved over time, the PAL-V Liberty is a groundbreaking product that inaugurates the age of the flying car.

The flying car does exist and has just completed its first flight. Equipped with an aircraft-like dashboard and a racecar engine, it requires both a driver's license and a pilot's license. As soon as it lands, the plane transforms into a car in just a few seconds. With a range of 620 miles, it reaches a cruising speed of 180 miles per hour.

Note the slightly different character spacing

Note the slightly different line spacing

618 New feature WD WB WM PRIVATE STORE: DEPLOY THE SAME APPLICATION TO MULTIPLE DIFFERENT SERVERS

In version 27, you can easily deploy the same application to stores located on different servers.

Benefit provided by this new feature of version 27:
An essential new feature

619 New feature WD WB WM EDIT CONTROL: THE HINT TEXT MOVES AND REMAINS VISI- BLE DURING INPUT



Edit controls allow you to use hint texts: indication texts to help users enter information. This text is defined either in the 7-tab window or in the code. In version 27, this hint text can be moved above the Edit control as soon as the user starts typing.

Benefit provided by this new feature of version 27:
Hints are always visible

620 New feature WD WB WM 5G



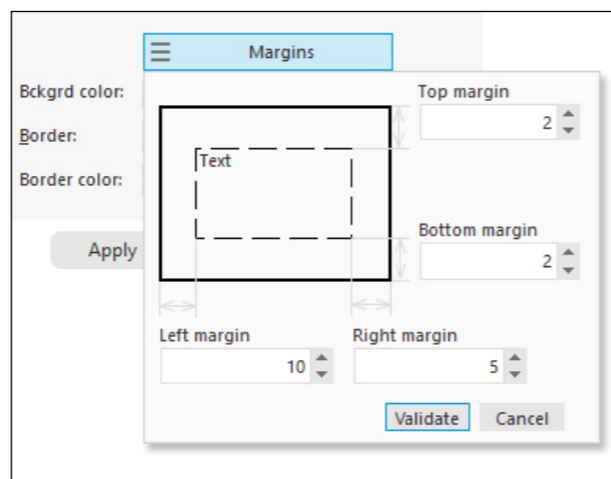
In version 27, it is possible to determine if the device is using a 5G network with the `MobileNetworkConnectionInfo` function.

This enables you to develop features that take advantage of the speed and low latency of 5G.

Benefit provided by this new feature of version 27:
Modernize and accelerate processes

621 New feature WD WB WM EDIT CONTROL: MARGINS

In version 27, you can set the size of margins in Edit controls for mobile devices. This allows for even finer UI customization.

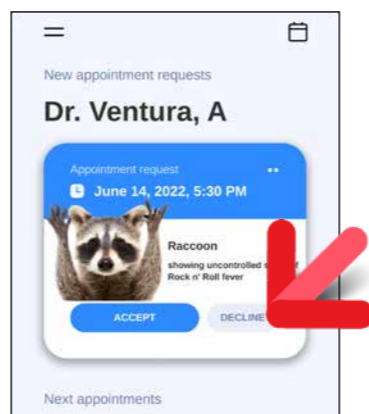


Margin settings in the 7-tab window

Benefit provided by this new feature of version 27:
Let's keep our distance!

622 New feature WD WB WM SHADOW ON BORDERS AND BUTTON CONTROL

In version 27, you can set a shadow on buttons and borders with a single click in the 7-tab window. This allows you to highlight a pinned button, for example.



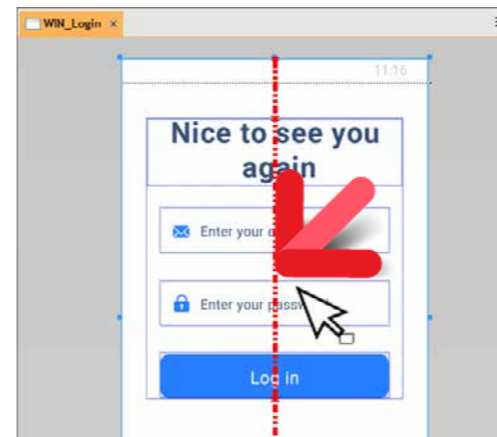
Shadow applied to borders

Benefit provided by this new feature of version 27:
A practical UI enhancement

623 New feature WD WB WM CENTER CONTROLS RELATIVE TO THE WINDOW

On a mobile device, it can be useful to horizontally center

controls in the window. In version 27, you can center controls via the snap feature in the window editor.



Controls centered in the window

Benefit provided by this new feature of version 27:
Perfect symmetry

624 New feature WD WB WM WLANGUAGE: CROSS-PLATFORM COMPONENTS

In version 27, you can create external components (in addition to internal components) common to iOS and Android, and also common to WINDEV and/or WEBDEV. See new feature 037

Benefit provided by this new feature of version 27:
Easier cross-platform

625 New feature WD WB WM WLANGUAGE: NEW SCROLL START AND END EVENTS

In version 27, the new `Start scrolling` and `Stop scrolling` events allow you to define a specific behavior when the user starts or stops scrolling, such as:

- showing a button when the bottom of a window is reached
- showing an option when scrolling back up.

Benefit provided by this new feature of version 27:
New programming possibilities

626 New feature WD WB WM IS ANYBODY THERE? PING: GET A SERVER RESPONSE

In version 27, the `Ping` function, which allows you to determine if a server is responding, is available in WINDEV Mobile.

Benefit provided by this new feature of version 27:
An essential function

AND FOR IOS

627 New feature WD WB WM COMMON NEW FEATURES FOR MOBILE



iOS development has never been as powerful as with WINDEV Mobile 27. You benefit from powerful new features that come in addition to all the existing ones. iOS evolves, and so does WINDEV Mobile 27. WINDEV Mobile 27 for iOS benefits from the general common features of version 27, **plus** new features common to mobile devices: Smart controls, Camera control, Popup control, TreeView Table control, ... And **in addition** to the general common new features **and** new features specific to mobile devices, version 27 includes the following new features for iOS.

628 New feature WD WB WM IOS 15, NEW IPHONE 13



The new iPhone 13

WINDEV Mobile 27 supports the new iOS 15. iPhone 13 and AppleWatch Series 7 are supported. In the case of iPads, applications run on all models since the 1st-generation iPad Air (2013).

Benefit provided by this new feature of version 27:
Enjoy all the features of iOS 15

629 New feature WD WB WM TRACKING TRANSPARENCY: NEW WLANGUAGE FUNCTIONS

Applications that need to collect and share information about the user must explicitly ask for the user's permission. This authorization can be requested with the new `AppleTrackingRequestAuthorization` WLanguage function. iOS remembers the user's response. You can view this response using the new `AppleTrackingAuthorizationStatus` function. Your application must take into account the user's response to determine if it can share user information.

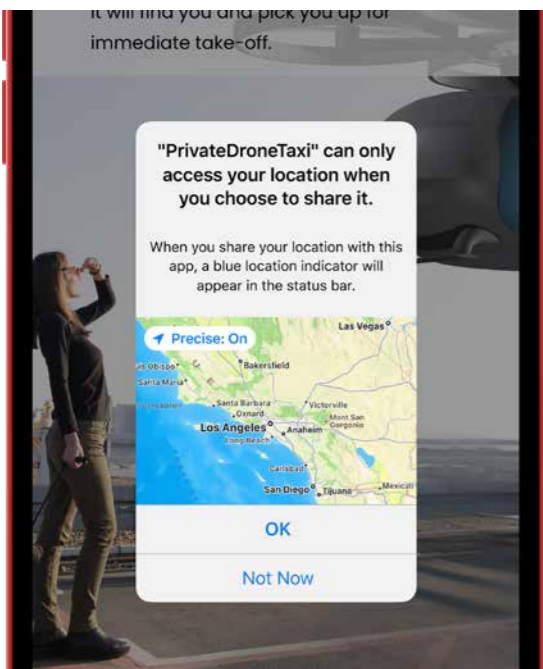
Benefit provided by this new feature of version 27:
Easily comply with privacy requirements

630 New feature WD WB WM APPLE LOCATIONBUTTON

A new standard button appears in iOS 15.



This button allows you to ask the user for a one-time authorization to access the phone's location: iOS then displays a popup message. WINDEV Mobile 27 automatically creates this type of button.

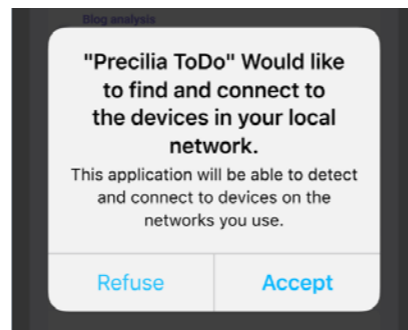


... and the confirmation message displayed automatically by iOS

Benefit provided by this new feature of version 27:
Request the user's authorization

631 New feature WD WB WM END-USER AUTHORIZATION REQUEST: ACCESS THE LOCAL NETWORK, OR AN HFSQL SERVER

In iOS, when the application needs to access a local network, an end-user authorization is required. iOS directly requests this authorization. In version 27, you can also customize the message that appears in this network access request. Note that only the second part of the message displayed by iOS can be customized.



Customized message

Benefit provided by this new feature of version 27:
Customization allowed

632 New feature WD WB WM IOS 15 WIDGET SUPPORT

Widgets created with WINDEV Mobile 27 can be positioned on the iPad Home screen.

Benefit provided by this new feature of version 27:
Increase your app's presence

633 New feature WD WB WM KEYBOARD SHORTCUT SUPPORT

Keyboard shortcuts are supported in iOS apps. This is used in apps running on an iPad with a keyboard and on Mac with Catalyst.

Benefit provided by this new feature of version 27:
I know a shortcut...

634 New feature WD WB WM PRIVATE STORE: MAKE YOUR CATALYST APPS AVAILABLE FOR MAC

In version 27, the Private Store also allows you to publish Catalyst apps.

Thus, you can easily distribute professional Mac apps.

Benefit provided by this new feature of version 27:
Even easier distribution

635 New feature WD WB WM WLANGUAGE SETFOCUSANDRE-TURNTouserINPUT

The `SetFocusAndReturnToUserInput` function is now available for iOS.

Benefit provided by this new feature of version 27:
(Finally!)

636 New feature WD WB WM 3 NEW TYPES

3 new types of variables are available for iOS:

JSONXMLConverter	Password	pdfParameter
------------------	----------	--------------

Benefit provided by this new feature of version 27:
More and more power for WLanguage

637 New feature WD WB WM 10 NEW PROPERTIES

10 new properties for iOS are available in WLanguage

TapToFocus	Camera	Pinned	Flash
HideWhileScrolling	DisplayModePreview	Hidden	Torch
MaxZoom	MinZoom		

Benefit provided by this new feature of version 27:
More and more power for WLanguage

638 New feature WD WB WM 49 NEW WLANGUAGE FUNCTIONS FOR IOS

WLanguage is enriched with 49 new functions for iOS, as well as 62 new constants and 9 functions for iOS widgets (see full list on our website).

AppleAdvertisingIdentifier	AppleRequestTrackingAuthorizationSynchronous	AppleTrackingAuthorizationStatus	CameraPhoto
CameraVideoStop	CameraVideoStart	StringDeleteDuplicate	StringToNum
Compare	CompareAscendingOrder	CompareDescendingOrder	dCopyScreenImage
dBlur	SetFocusAndReturnToUserInput	EmailExportHTML	fCopyDir
HTMLUnwrapAllChildren	HTMLWrap	HTMLWrapAllChildren	HTMLInsertAfter
HTMLInsertBefore	HTMLInsertLastChild	HTMLInsertFirstChild	HTMLModifyAttribute
HTMLRemove	HTMLRemoveAttribute	HTMLRemoveChild	HTTransactionSavepoint
HTTransactionRollbackToSavepoint	OpenAsynchronous	OpenPopupAsynchronous	Ping
RegexSearch	RegexReplace	AssistedInputDeleteAll	SocketConnectSSL
TableAddChild	TableSearchChild	TableMoveBranch	TableSwapBranch
TableChildCount	TableInsertChild	TableListChild	TableGiveChild
TableGiveParent	TableDeleteChild	TableSortChild	WebSocketClientConnect
WebSocketClientConnectSSL			

639 New feature WD WB WM 4 NEW WLANGUAGE FUNCTIONS FOR APPLE WATCH

4 new WLanguage functions are available for Apple Watch.

StringDeleteDuplicate	StringToNum	RegexSearch	RegexReplace
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640 New feature WD WB WM COMMON NEW FEATURES FOR MOBILE



Development for Android has never been as powerful as with WINDEV Mobile 27.

The amount of powerful features at your disposal keeps growing.

Android evolves, and so does WINDEV Mobile 27, most notably with its support for **Android 12**.

WINDEV Mobile 27 for Android benefits from the common new features of version 27, **plus** mobile-specific new features, **plus** Android-specific new features.

641 New feature WD WB WM PROGRAMMATICALLY DOWNLOAD FILES



Android features a "Download manager", which downloads files in the background.

WINDEV Mobile 27 allows you to easily control this download manager.

Files are downloaded in the background, regardless of the application.

The new `Download` functions allow you to define the download options:

- name of the file(s) (URL)
- Wi-Fi only
- callback at end of the download (option)

• ...

Benefit provided by this new feature of version 27:
Less actions for the end user

642 New feature WD WB WM EASILY MANIPULATE FILES IN ANDROID 11 AND LATER

Android 11 and later do not allow an application to directly open files (image, video, text, etc.) created by other applications.

This means that the latest versions of Android do not allow access to external files using their physical path.

It is necessary to handle these files by their URI.

Reminder: the URI is a unique identifier that describes the file location. The URI can only be obtained once the user has manually selected the file.

WINDEV Mobile 27 includes new **URI** WLanguage functions to read and write external files.

Benefit provided by this new feature of version 27:
Files accessible programmatically

643 New feature WD WB WM WLANGUAGE: NEW XML FUNCTIONS

In version 27, handling XML files in Android is easier than ever.

New WLanguage functions are added to the **XML** family. Most notably, these functions allow you to create XPath queries and sign XML documents.

Benefit provided by this new feature of version 27:
Even richer XML programming

644 New feature WD WB WM NEW WLANGUAGE TYPES: BORDER, CORNER, GRADIENT, BACKGROUND

The WYSIWYG approach of the window editor allows you to define the UI of Android applications.

You can edit this UI in the code: add a red border around a control, for example.

Making these changes in the code is now easier in Android, thanks to new types of variables: **Border**, **Corner**, **Gradient**, **Background**...

Benefit provided by this new feature of version 27:
Edit the UI from the code

645 New feature WD WB WM FASTER TESTS (GO) ON THE DEVICE

In version 27, performing a series of tests (via the GO option) on a mobile device is much faster.

Recompilations are optimized.

Usually, when multiple devices are connected to the PC (1 phone and 1 tablet, 1 phone and the emulator, 2 phones,

etc.), you are prompted to choose the device to use. In version 27, you can specify the desired device without being prompted again.

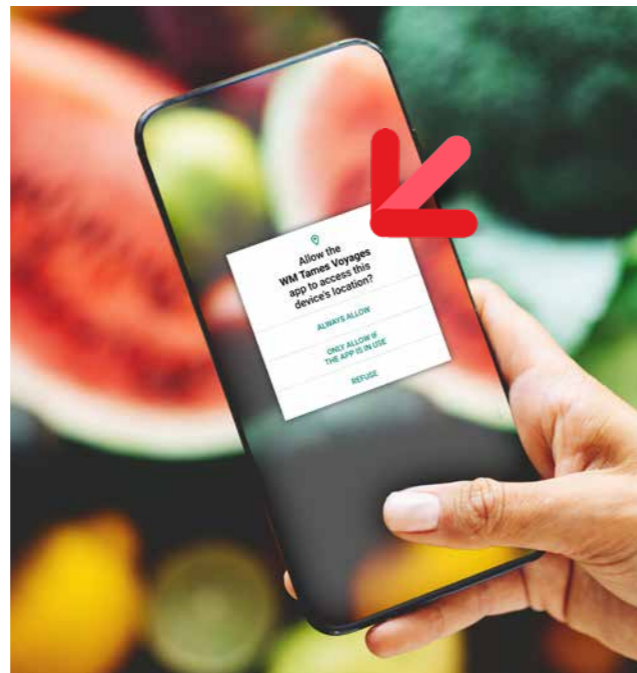
Benefit provided by this new feature of version 27:
Useful for testing

646 New feature WD WB WM IMAGE TYPE: MANAGE EXIF DATA

Now you can natively manage photo EXIF data in Android projects.

Benefit provided by this new feature of version 27:
Get every detail of your photos

647 New feature WD WB WM NEW WLANGUAGE FUNCTIONS FOR MANAGING PERMISSIONS



Standard Android authorization request

In version 27, you can programmatically request permissions. This allows you to anticipate the permission requests that an application will have to make.

The new **Permission** functions can be used to request a permission or check if a permission has already been granted.

Benefit provided by this new feature of version 27:
Think ahead

648 New feature WD WB WM WLANGUAGE FUNCTIONS EXCEPTION: THE FAMILY JUST GOT BIGGER

An "exception" is an error that breaks the normal execution of an application.

If this exception is not caught by the code, the application stops.

A WLanguage error is an example of an exception: if the code of your application does not handle the exception, the application stops.

Exception handling becomes richer and more customizable in version 27.

The **Exception** and **Error** WLanguage families now include new functions.

For example, the new **ErrorPropagate** function throws an error again.

See the list of new WLanguage functions in the new feature 658.

Benefit provided by this new feature of version 27:
Let's make an exception

649 New feature WD WB WM PASS COMMAND LINE PARAMETERS

You can pass parameters to Android applications. There are three possible ways to pass parameters:

- When testing the application in the environment
- From the Android Control Center
- Via the **ExecRun** WLanguage function.

In the application, the values of the passed parameters can be retrieved using the **CommandLine** WLanguage function, as usual.

Benefit provided by this new feature of version 27:
Less actions

650 New feature WD WB WM CONTROL STYLES: SVG SUPPORTED

SVG images are now supported in the control styles for Android.

Benefit provided by this new feature of version 27:
Make the most of vector images

651 New feature WD WB WM PUBLISH YOUR APPS IN THE AMAZON APPSTORE



Android apps developed with WINDEV Mobile 27 can be published in the Amazon Appstore.

Benefit provided by this new feature of version 27:
Make your apps available on Amazon!

652 New feature WD WB WM SERIAL PORTS IN ANDROID: DEVICE OR SMART INDUSTRIAL EQUIPMENT

WINDEV Mobile 27 allows you to manage RS-232 connections.

It can be a mobile device, or a smart device integrated to industrial equipment, such as an industrial oven control.

The **sxxx** family of WLanguage functions for managing serial ports is available in Android.

Benefit provided by this new feature of version 27:
Simplified programming in industrial environments



653 New feature WD WB WM IN-APP PURCHASES: NEW APIS SUPPORTED

Android has implemented a new way to integrate In-App purchases.

WINDEV Mobile 27 follows these changes.

You don't need to modify your existing WLanguage code. Simply recompile the application in version 27.

Benefit provided by this new feature of version 27:
Effortless In-App purchases

654 New feature WD WB WM IPARAMETERPDF

The **iParameterPDF** function is now available for Android. This function allows you to configure PDF files generated from a report.

Benefit provided by this new feature of version 27:
Fine-tune your PDFs

655 MISCELLANEOUS

- External components are supported
- The **Filter/Map/Reduce** functions are available for Android.
- SSL** sockets are now available for Android.
- The **Continent** and **Country** variable types, as well as their associated functions are available for Android.

Benefit provided by this new feature of version 27:
Easy programming

656 WLANGUAGE 12 NEW TYPES

12 new types of variables are available for Android:

Border	Continent	Background	Country
pdfParameter	Permissions	DownloadInfo	DownloadParameter
xmlSignature	xmlSignatureInformationKey	xmlSignatureReference	xpathResult

Benefit provided by this new feature of version 27:
Very useful types

657 WLANGUAGE 7 NEW PROPERTIES

7 new WLanguage properties are available for Android

Camera	Pinned	Flash	HideWhileScrolling
Torch	MaxZoom	MinZoom	

Benefit provided by this new feature of version 27:
More and more power for WLanguage

New feature WD WB WM

658 to 758 101 NEW WLANGUAGE FUNCTIONS FOR ANDROID

In version 27, WLanguage integrates 101 new functions for Android, as well as 77 new functions for Android widgets and 187 new constants (see full list on our website).

Reduce	Apply	BufferToPhrase	BufferToURI
CameraPhoto	CameraVideoStop	CameraVideoStart	StringDeleteDuplicate
StringToNum	ContinentList	ContinentGet	DateTimeToReal
dBorder	LastDayOfYear	diffApply	diffCreate
ErrorChangeParameter	ErrorPropagate	ErrorReset	ErrorRestoreParameter
ExceptionChangeParameter	ExceptionPropagate	ExceptionRestoreParameter	fContentType
FileToURI	Filter	fCopyDir	HTMLUnwrapAllChildren
HTMLWrap	HTMLWrapAllChildren	HTMLInsertAfter	HTMLInsertBefore
HTMLInsertLastChild	HTMLInsertFirstChild	HTMLModifyAttribute	HTMLRemove
HTMLRemoveAttribute	HTMLRemoveChild	iParameterPDF	CommandLine
LuhnCalculate	LuhnCheck	NumToFinancialWritingChinese	OpenAsynchronous
OpenPopupAsynchronous	CountryList	CountryGet	Phonetic
PhraseToBuffer	Ping	RealToDateTime	sinEntryQueue
sInExitQueue	sEscape	sWrite	sEvent
sClose	sEndEvent	sParameter	sListPort

sRead	SocketConnectSSL	sOpen	TableAddChild
ArrayAddSorted	ArrayDistinct	ArrayIntersect	ArrayUnion
ArrayUnionAll	TableSearchChild	TableMoveBranch	TableSwapBranch
TableItemStatus	TableChildCount	TableInsertChild	TableListChild
TableGiveChild	TableGiveParent	TableRestorePositionAndSelection	TableSavePositionAndSelection
TableDeleteChild	TableSortChild	TableTypeItem	DownloadAdd
DownloadList	DownloadGetInfo	DownloadRemove	Map
CheckAllFalse	CheckAllTrue	CheckAnyFalse	CheckAnyTrue
WindowsVersion	WebSocketClientConnect	WebSocketClientConnectSSL	XMLValidDocument
XMLExecuteXPath	XMLOpenReader	XMLSign	LooperRestorePositionAndSelection
LooperSavePositionAndSelection			

WINDOWS MOBILE, EMBEDDED & CE

Windows Mobile, Windows CE and Windows Embedded are still used in the industrial field. Applications for Windows Mobile, Windows CE and Windows Embedded can be developed with WINDEV Mobile 26. You can access version 26 from WINDEV Mobile 27.

UWP

759 COMMON NEW FEATURES

UWP development benefits from most of the common new features of version 27.

Benefit provided by this new feature of version 27:
UWP evolves

760 NEW ENVIRONMENT

UWP development also benefits from the improvements of the development environment in version 27.

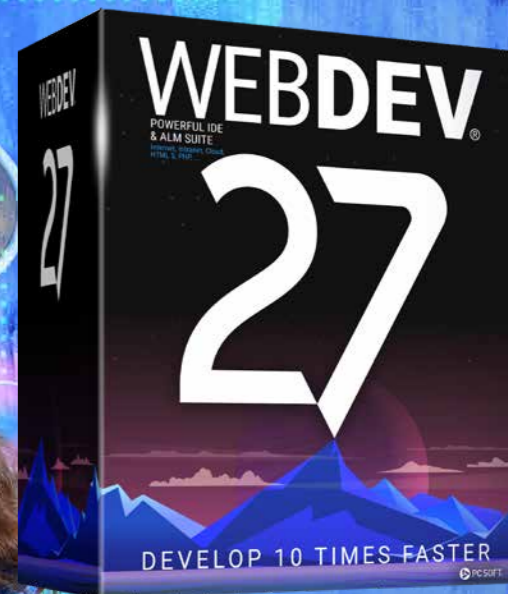
Benefit provided by this new feature of version 27:
Increased ease of use

761 8 NEW WLANGUAGE FUNCTIONS FOR UWP

8 new WLanguage functions are introduced for UWP.

StringDeleteDuplicate	StringToNum	Compare	CompareAscendingOrder
CompareDescendingOrder	EmailExportHTML	HTransactionSavepoint	HTransactionRollbackToSavepoint

WEBDEV



la vie en bleu

762 WEBDEV 27: BENEFIT FROM THE 169 NEW FEATURES OF VERSION 27



WEBDEV 27 benefits from most of the 169 common new features in version 27.

WEBDEV 27 boasts higher speeds, new controls, new Smart controls, detection of obsolete technology in the code, AI object detection, richer code editor, improved Project Monitoring Center, secure passwords in HFSQL, new features in WLanguage, etc. And in addition to all these new features, WEBDEV 27 benefits from new features specific to the Web. See the following pages to learn more.

Benefit provided by this new feature of version 27:
An incredible amount of new features

NEW SMART CONTROLS

- save
- zoom
- ...

Benefit provided by this new feature of version 27:
Read PDF files without leaving the site

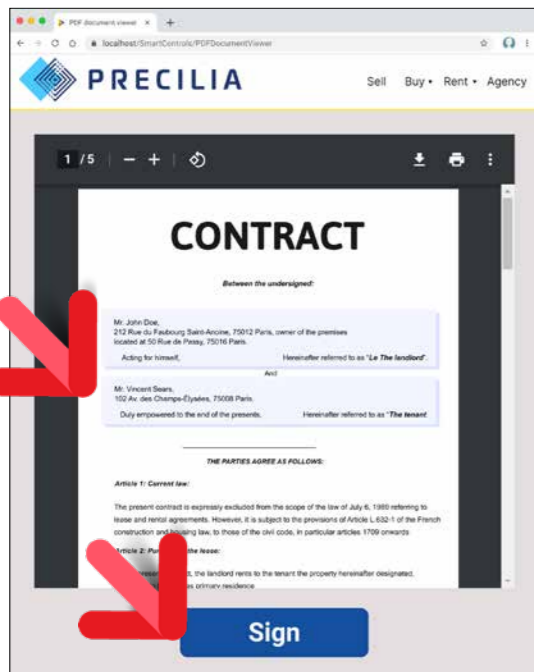
763 to 767 New feature WD WB WM 5 NEW SMART CONTROLS FOR WEBDEV

5 new Smart controls are available in WEBDEV 27:

- PDF viewer integrated in the page
- Combo Box with input mode
- Timeline
- "Panel" button
- Tokenized email address input.

Benefit provided by this new feature of version 27:
Massive time savings

768 New feature WD WB WM NEW SMART CONTROL INTEGRATED PDF READER



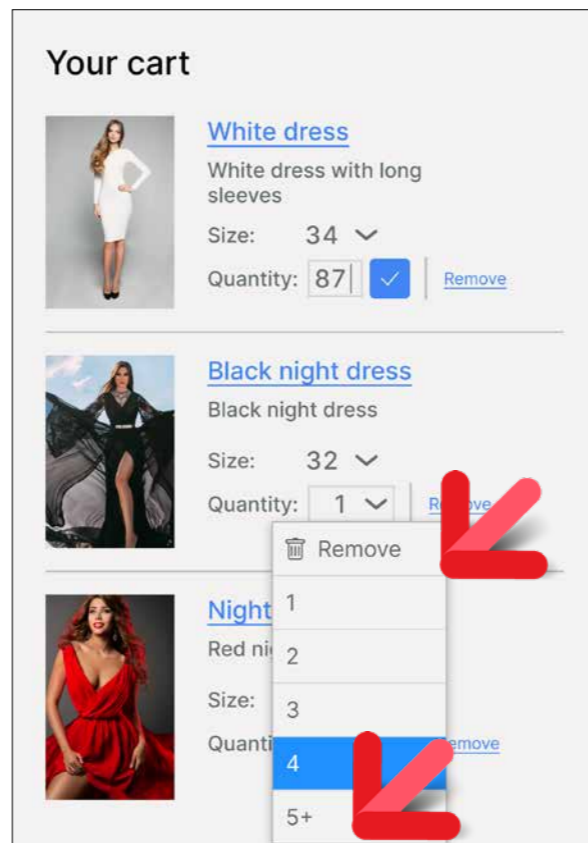
View and sign PDF files without leaving your site!

The "PDF Reader" Smart control allows you to integrate a standalone PDF reader into a page. With this Smart control, the PDF is opened directly within the page, in your site. The standard PDF reader features are available in the Smart control:

- access pages by number
- text search
- print

769 New feature WD WB WM NEW SMART CONTROL COMBO BOX WITH INPUT MODE

The "Combo Box with input mode" Smart control allows you to display and select a quantity from 1 to n. If the desired quantity is n or more, the Smart control opens an input area. The "Delete" option calls a specific code. As with any other Smart control, the source code is provided and can be fully modified and customized.



A common input mode in e-commerce sites

Benefit provided by this new feature of version 27:
User-friendly input method

770 New feature WD WB WM NEW SMART CONTROL TIMELINE

The "Timeline" Smart control includes all the options to manage a timeline (series of events). You can configure each element.

Continues page 74...

DIAGRAM EDITOR CONTROL FOR WEBSITES

NEW WEB DIAGRAM EDITOR CONTROL

771 New feature WD WB WM NEW DIAGRAM EDITOR CONTROL: ALSO FOR WEBSITES

The new Diagram Editor control is also available for your websites in WEBDEV 27. This control allows you to integrate all the power and features of a full-blown diagram editor in your sites. Your sites can include diagrams created programmatically, but you can also allow users to create their own diagrams.

Benefit provided by this new feature of version 27:
Web users can edit their own diagrams

The control displays diagrams, but also allows users to create their own

772 New feature WD WB WM NEW DIAGRAM EDITOR CONTROL: POWERFUL FUNCTIONALITIES WITHOUT LEAVING THE BROWSER

The features of the new Diagram Editor control are adapted to the specifics of web development.

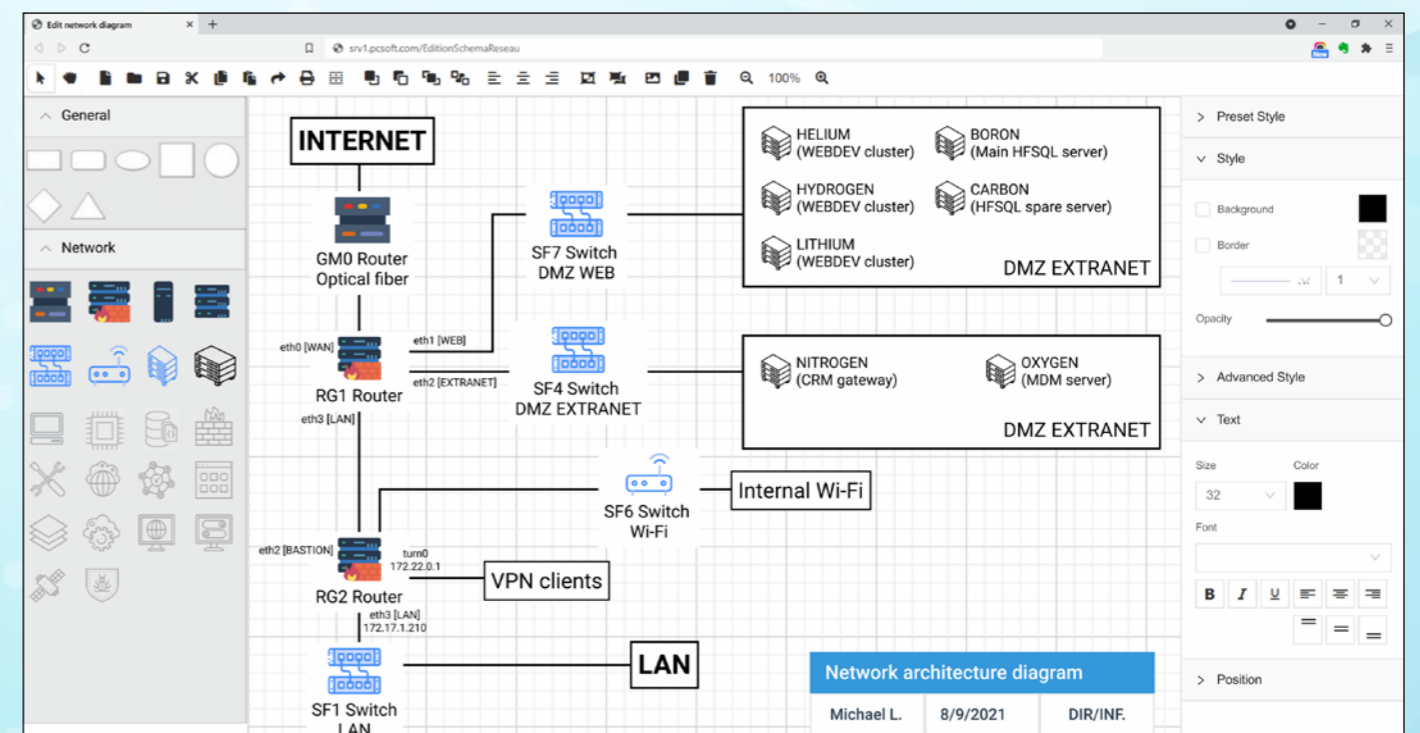
Users can add, connect, move, zoom and edit shapes in the diagram, edit their properties and text... They will then be able to save changes. No programming is required.

Benefit provided by this new feature of version 27:
Diagrams in websites

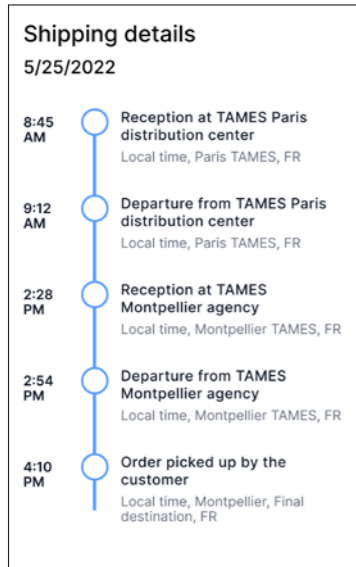
773 New feature WD WB WM NEW DIAGRAM EDITOR CONTROL: FEATURES AND PROGRAMMING

The features and programming possibilities of the Diagram Editor control are the same as in WINDEV (see new features 003 to 020).

Writing cross-platform code is easier than ever!
Benefit provided by this new feature of version 27:
Share your source code



Computer network infrastructure diagram being edited in a browser



A clear, easy-to-read timeline

Benefit provided by this new feature of version 27:
View processes in a clear layout

774 New feature WD WB WM NEW SMART CONTROL PANEL BUTTON

The "Panel Button" Smart control is composed of a panel and a button. Clicking the button opens the panel over the current page, according to the defined position.

Benefit provided by this new feature of version 27:
Smart control, smart behavior

775 New feature WD WB WM NEW SMART CONTROL TOKENIZED EMAIL ADDRESS

The "Tokenized email address" Smart control enables email address input with an autocomplete feature. See new feature 174.

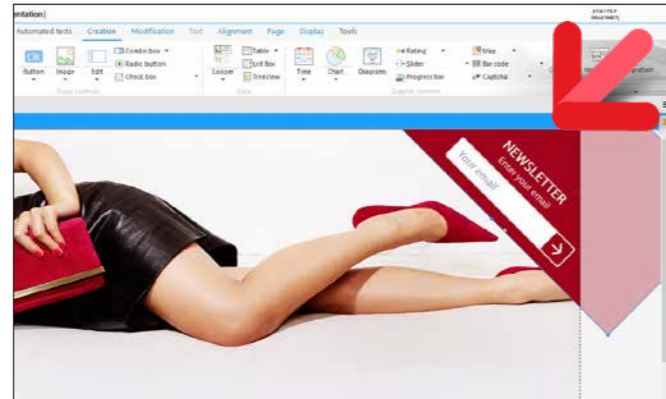
Benefit provided by this new feature of version 27:
Modern UI

NEW FEATURES FOR CONTROLS

776 New feature WD WB WM ROTATE CONTROLS

The WEBDEV 27 editor allows you to rotate all types of controls, whether they are editable or read-only. You can set any angle.

While rotating, the control can also snap to 30, 45, 90 and 180-degree angles. In version 27, rotation is shown directly in the page editor.



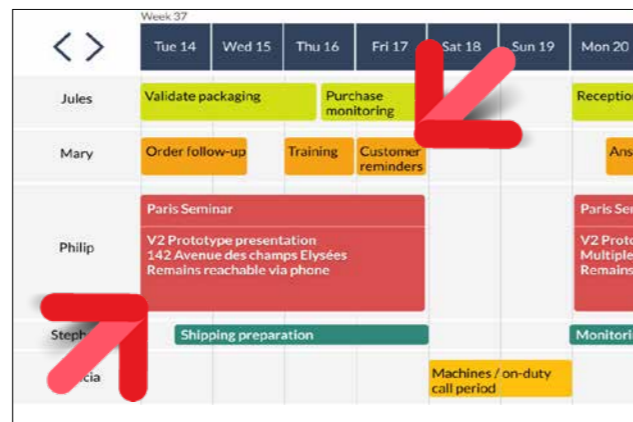
Rotated controls in the page editor

Benefit provided by this new feature of version 27:
WYSIWYG

777 New feature WD WB WM SCHEDULER CONTROL: ADJUST THE HEIGHT AND WIDTH OF RESOURCES

The Scheduler control is widely used in applications and sites. In version 27, you can set the height and width of resources and dates.

This allows you to fully customize a schedule. Simply use the following properties: `..ResourceWidth`, `..ResourceHeight`, `..DateWidth` and `..DateHeight`.



Scheduler control created with WEBDEV 27

Benefit provided by this new feature of version 27:
Fully-customized schedules

778 New feature WD WB WM THUMBNAIL CONTROL: MULTIPLE IMPROVEMENTS

The default behavior of the Thumbnail control has been standardized:

- pressing the Esc key closes the thumbnail
- clicking outside the thumbnail closes the thumbnail

Continues page 76...

WEBDEV TABLE CONTROL 11 NEW MUST-HAVES

11 ESSENTIAL NEW FEATURES FOR WEBDEV TABLES

The Table control is widely used in WEBDEV to quickly adapt existing WINDEV applications. In version 27, there are more features specific to Table controls.

New feature WD WB WM

779 to 789 11 NEW FEATURES FOR WEBDEV TABLES

Table controls in WEBDEV 27

are enriched with essential features for your users: There are more UI customization possibilities:

1. Ability to select a cell, instead of the whole row
2. Ability to move the selection range using the arrow keys
3. Ability to define a specific tooltip for each cell

4. **TableInfoXY**, a new WLanguage function to identify the type of element being hovered over
5. Sort columns: ability to click the column header to sort data
6. Bigger, more practical search icon
7. The search context menu has been revised and improved
8. "Contains" search mode by default

The following 3 new features are also useful additions:

1. More intuitive Table creation wizard
2. Ability to hide columns by layout
3. Ability to store values in **Attribute** columns. This type of column is not displayed.

Benefit provided by this new feature of version 27:
More efficient UIs

Search icon Search menu Sort column by clicking the header

Select cells individually Move selection range with arrow keys Cell-specific tooltip

Customer number	Last activity	Client account	Status	Total	Payment method	Delivery
<input checked="" type="checkbox"/> Aaron THOMSEN aaron.thomsen@gmail.com		Pro account	ACTIVE	\$251,087	Direct debit	8 days
<input type="checkbox"/> Yaser BALDANI y.baldani@gmail.com		Pro account	ACTIVE	\$755,887	Cash	2 days
<input type="checkbox"/> Virginia PORTACCELLI virg-portaccelli@gmail.com		Pro account	SUSPENDED	\$47,120	CC	5 days
<input checked="" type="checkbox"/> Stefan RODRIGUEZ rodriguez.stef@outlook.com	6/20/2021	Pro account	ACTIVE	\$5,234	Direct debit	5 days
<input type="checkbox"/> Emilie MOSTINSKY emilie-mostinsky@gmail.com	6/28/2021	Pro account	ACTIVE	\$987,140	Not specified	3 days
<input type="checkbox"/> Geoffrey AMPELAS gampelas@gmail.com	5/18/2021	Pro account	ACTIVE	\$1,478,542	Not specified	
<input type="checkbox"/> Lucie VANDEJONGHE lucie-vandjonghe@outlook.com	5/14/2021	Pro account	CLOSED	\$74,658	Cash	
<input type="checkbox"/> Pablo PEREZ perez.pp@gmail.com	6/11/2021	VIP	ACTIVE	\$2,987,140	Not specified	2 days

- the thumbnail is resized along with the browser
- the thumbnail is now displayed with a smooth transition
- the close button has been relocated and resized
- the thumbnail can be closed by swiping down
- ...

Benefit provided by this new feature of version 27:
User-friendly thumbnails

790 New feature WD WB WM MENU CONTROL: LIGHTER, FASTER PAGES

Starting with version 27, Menu controls are lighter by default, compared to earlier versions.

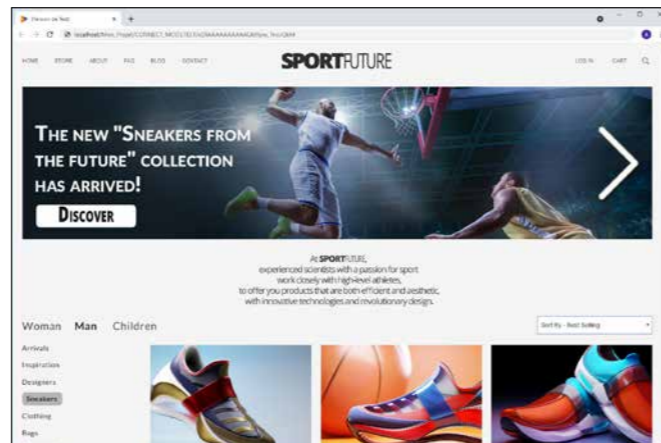
The "Dynamic" option is no longer checked by default in the 7-tab window of the Menu control.

When a Menu control is used in a page template, it has a huge impact on the weight of HTML pages. For lighter pages, make sure this option is unchecked.

Benefit provided by this new feature of version 27:
Lose weight without dieting

792 New feature WD WB WM 5 NEW PRESET PAGES READY TO USE

In version 27, 5 new preset pages have been added: product page, product catalog, dashboard, login, about. These pages appear when creating a blank page.



These pages are ready to be used... or edited!

Benefit provided by this new feature of version 27:
Create your pages even faster

PAGE EDITOR

791 New feature WD WB WM MIND-BLOWING SPEED

In version 27, the WEBDEV page editor is faster than ever before. It now boasts numerous improvements. See new features 795 to 799

Benefit provided by this new feature of version 27:
Faster, more efficient development

793 New feature WD WB WM ZONING MODE: SIMPLIFICATIONS

You can now access the zoning mode functionalities (adding and resizing areas, editing properties of an area, etc.) without having to change the edit mode.

The UI is much more intuitive and that changes everything!

Benefit provided by this new feature of version 27:
Easier editing

Continues page 78...

794 New feature WD WB WM RESIZE OR MOVE A CONTROL AND PUSH ALL ELEMENTS BELOW THE CONTROL

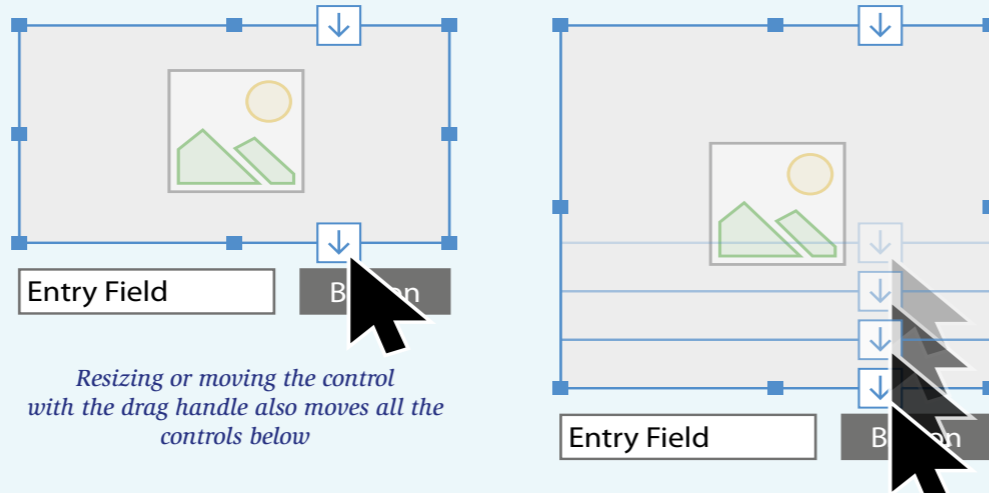
A new way of moving controls appears in version 27: the Drag mode. For this purpose, a new handle now appears on the selected control: the drag handle.

This handle allows you to move the control and all the controls below it in a single action.

This mode is ideal for inserting or removing elements without losing the existing layout.

Benefit provided by this new feature of version 27:

A truly essential functionality



Resizing or moving the control with the drag handle also moves all the controls below

WEBDEV 27 EDITOR FASTER THAN EVER



FASTER PAGE EDITOR

The WEBDEV environment is significantly faster in version 27.

Some actions are up to three times faster, which obviously improves workflow in the environment.

795 New feature WD WB WM PAGE GENERATION: UP TO 3 TIMES FASTER

In version 27, pages are generated three times faster in large projects: you will notice this improvement right away.

Benefit provided by this new feature of version 27:
Generate pages faster

796 New feature WD WB WM UPDATE TEMPLATES: 3 TIMES FASTER

In version 27, you can update templates 3 times faster. Since most websites developed with WEBDEV use templates, you will also notice this improvement right away.

Benefit provided by this new feature of version 27:
Update templates faster

797 New feature WD WB WM FASTER COMPILATION

In version 27, projects are compiled using all processor cores

by default: this reduces compile time, depending on the power of your machine. Since modern processors come with more cores, this feature is likely to prove itself very useful.

Benefit provided by this new feature of version 27:
Take full advantage of the processor's power

798 New feature WD WB WM FASTER COMPILATION AFTER RE- TRIEVING ELEMENTS FROM SCM

When other team members check elements back into the SCM, pages are recompiled and generated when these elements are retrieved.

In version 27, these operations are optimized and are on average 3 times faster.

Benefit provided by this new feature of version 27:
Accelerate teamwork

799 New feature WD WB WM REMOVE OBSOLETE FEATURES FROM PAGES

The environment in version 27 includes a useful feature to detect obsolete technologies in your projects.

Using some of these obsolete technologies results in larger and slower pages, thus increasing generation time.

To accelerate these pages, simply follow the suggestions shown in the environment.

See new feature 067

Benefit provided by this new feature of version 27:
Lighter pages

800 New feature WD WB WM PASTE AND KEEP TEXT ONLY IN A RICH TEXT AREA

By default, when text is pasted into a Rich Text Area, it keeps its original style properties.
In version 27, you can paste text and discard its formatting.

Benefit provided by this new feature of version 27:
Less actions!

801 New feature WD WB WM SECURITY AND PERFORMANCE OF YOUR SITES: BE NOTIFIED IF OBSOLETE TECHNOLOGY IS USED

A site evolves.
It may have been created with an earlier version of WEBDEV, then evolve to meet the needs and changing habits of Internet users.
After several years, it is likely that a page or code uses old technologies that are now obsolete.
This can cause slowdowns, excessive memory consumption, security risks...
WEBDEV 27 identifies old technologies used in the project, and suggests changes to be made to update, optimize and secure the site.
See new features 066 to 070.

Benefit provided by this new feature of version 27:
Make your sites faster

802 New feature WD WB WM DETECT NON-READABLE COLORS (CONTRAST)

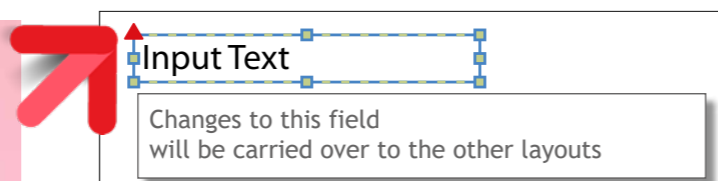
In version 27, a new UI compilation error lets you know if a text color is too similar to the background color, making the text unreadable.

Benefit provided by this new feature of version 27:
No more black on black

LAYOUTS

803 New feature WD WB WM LAYOUT: HANDLES INDICATE THAT SIZE AND POSITION ARE NOT DISSOCIATED

When defining a layout (as in RWD), you can dissociate the size and position of a control.
The dissociated control will therefore have a custom behavior only in this layout.
In version 27, the top-left handle of non-dissociated controls is shown as a red triangle.
This indicates that the changes made to this control will be propagated to all layouts.



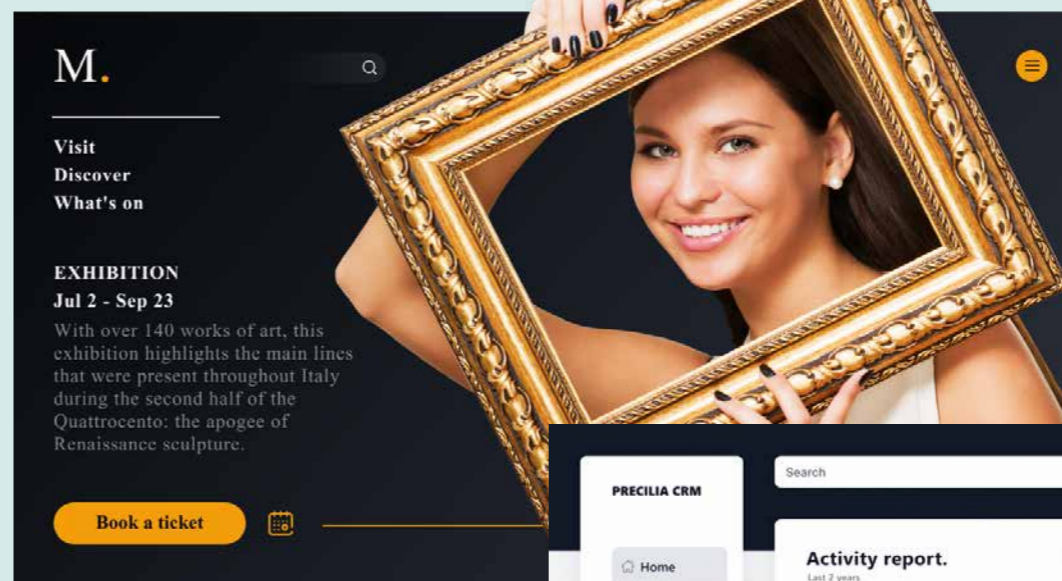
The red triangle identifies a non-dissociated control: the changes made will take effect in the other layouts!

Benefit provided by this new feature of version 27:
Eliminates a risk of error

804 New feature WD WB WM CONVERT LAYOUT AREAS TO CELLS

On a phone, blocks are usually arranged vertically.
When working with horizontal layouts, developers often need to replace these areas with cells, which can then be arranged one above the other in the mobile layout.
Version 27 includes a refactoring option for existing areas and cells.

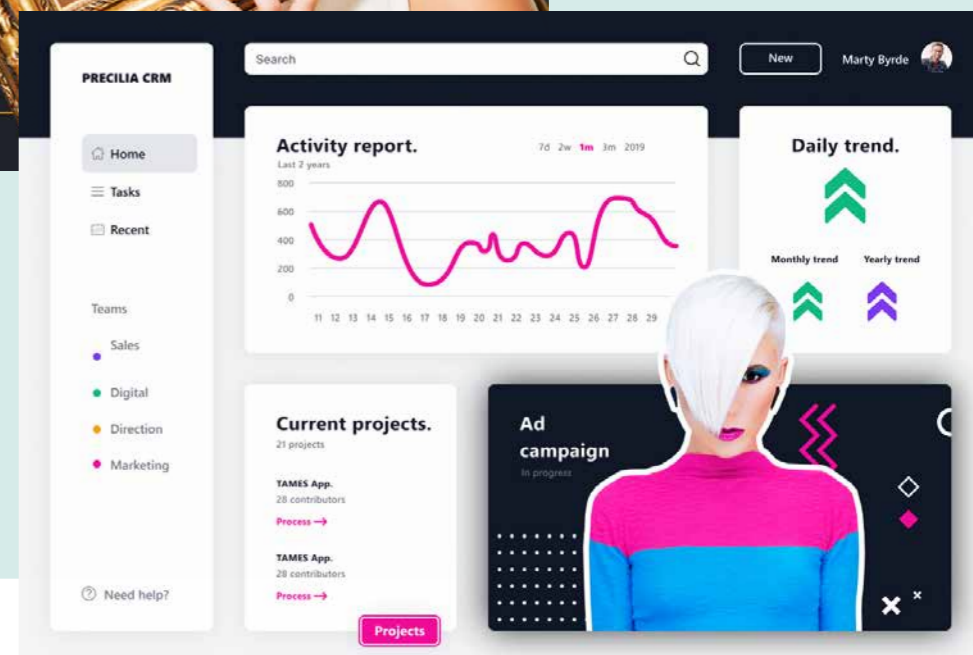
Benefit provided by this new feature of version 27:
Less actions!



Benefit provided by this new feature of version 27:
More and more choices

805 New feature WD WB WM 2 NEW SKINS

2 NEW SKINS
2 new skins are provided in version 27: Museum and Night-City.
Use these skins for your sites as you like!



806 New feature WD WB WM PAGE TEMPLATE WITH LAYOUTS: DISABLE LAYOUTS

A page template can contain layouts.
Pages that inherit this template also inherit these layouts.
In version 27, in the page, you can disable one or more layouts inherited from the template.

Benefit provided by this new feature of version 27:
Enable layouts gradually

807 New feature WD WB WM RWD: HANDLES THAT INDICATE THAT SIZE AND POSITION ARE NOT DISSOCIATED

In Responsive Web Design mode, you can dissociate the size and position of a control in a slice.
The dissociated control will therefore have a custom behavior in that slice.
In version 27, the upper-left handle of non-dissociated controls is a red triangle.
This lets you know that any changes made to the control will affect the next slice.

Benefit provided by this new feature of version 27:
No surprises

RESPONSIVE WEB DESIGN

808 New feature WD WB WM A WINDOW TO LIST AND EDIT OVERRIDES

In RWD, you can override properties in each slice: visibility, font size...
In version 27, a window lists all the overrides of all the

Continues page 82...



OMG, version 27 is available!

APPLICATION SERVERS IN CLUSTER MODE

809 New feature WD WB WM 2, 10, 100, 1,000 SERVERS

With the WEBDEV Application Server in version 27, you can create server clusters with ease. Clusters make it possible to install as many application servers as desired, and thus to distribute the site workload across these servers.

Benefit provided by this new feature of version 27:
No limits

810 New feature WD WB WM OPERATING MODE: SIMPLE

A cluster can be installed in 4 simple steps.

Step 1: The load balancer

The first step is to install a Proxy which will distribute the sessions across the different servers.

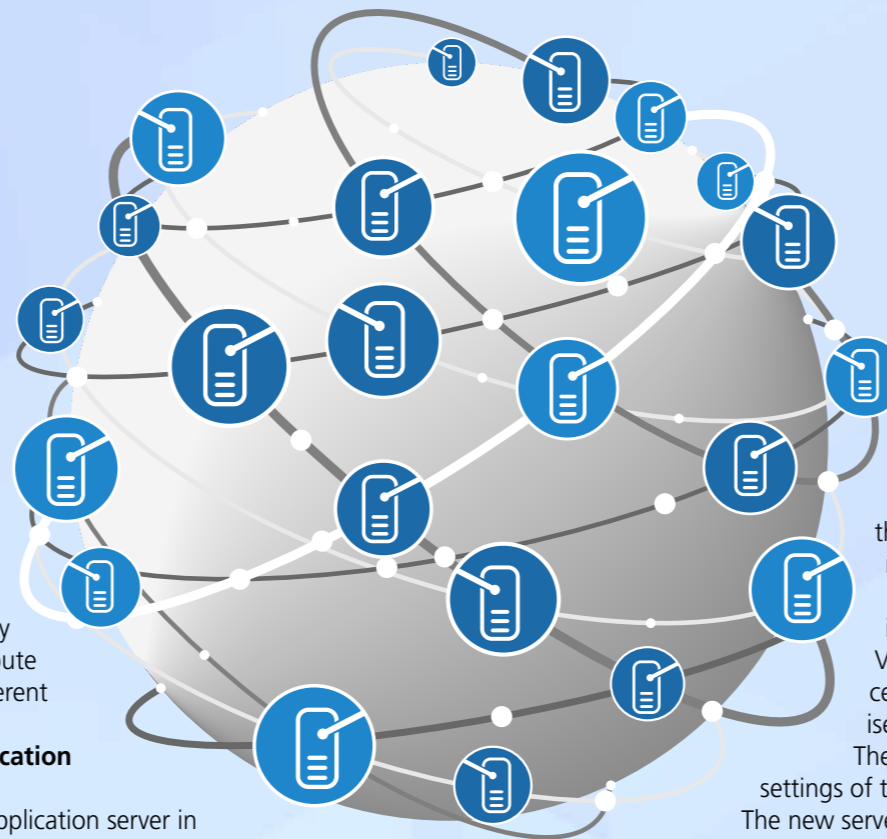
This proxy comes with WEBDEV, as both a Docker image and

a VM. Simply install this Docker image or VM on a Linux server. Please note that the application servers that will make up the cluster do not have to be in the same location.

You can also use a proxy of your choice to distribute the load across the different application servers.

Step 2: The first application server

Simply install the first application server in cluster mode on a physical Windows server (or VM) at the location of your choice. The Cluster mode can be selected when installing the application server.



MULTIPLE SERVERS FOR AN UNLIMITED NUMBER OF SIMULTANEOUS CONNECTIONS

Step 3: The other application servers

When installing the other servers, simply indicate that they must join an existing cluster.

The cluster must then "accept" the new application server (for security reasons).

Each application server can be installed on a physical server (or VM) at any location you want: data-center of your choice, in your premises,...

The new application server adopts the settings of the cluster, as well as the accounts.

The new server is added to the existing cluster, and synchronizes automatically: the sites on the other machines in the cluster are automatically installed on the new server.

Step 4: The database

The database can be at any location.

Benefit provided by this new feature of version 27:
Take your sites further.

812 New feature WD WB WM BENEFITS: REDUNDANCY, AVAILABILITY IN CASE OF FAILURE...

Implementing a cluster of WEBDEV servers in different locations provides certain advantages:

- Availability in case of hardware failure: if a disk or machine fails, the other machines remain available
- Availability in case of software failure
 - Availability during Windows updates: when a Windows update is running, the other machines remain available
 - Horizontal scalability: during high-demand periods, add 10 servers and you're ready to go!
 - Application server update: you can do it by stages, with zero downtime.

Benefit provided by this new feature of version 27:
Nothing but benefits!

AUTOMATIC UNLIMITED CONNECTIONS SCALABILITY RESILIENCE

813 New feature WD WB WM WEB ADMINISTRATOR: MONITORING TOOLS

The WEBDEV administrator (Web version) allows you to manage every aspect of the cluster:

- List of nodes
- Status of nodes
- Server load
- Add or remove a node
- ...

Any site updates or any changes made to the configuration or account on an application server will be automatically synchronized with the other servers.

Benefit provided by this new feature of version 27:
Easy, stress-free management

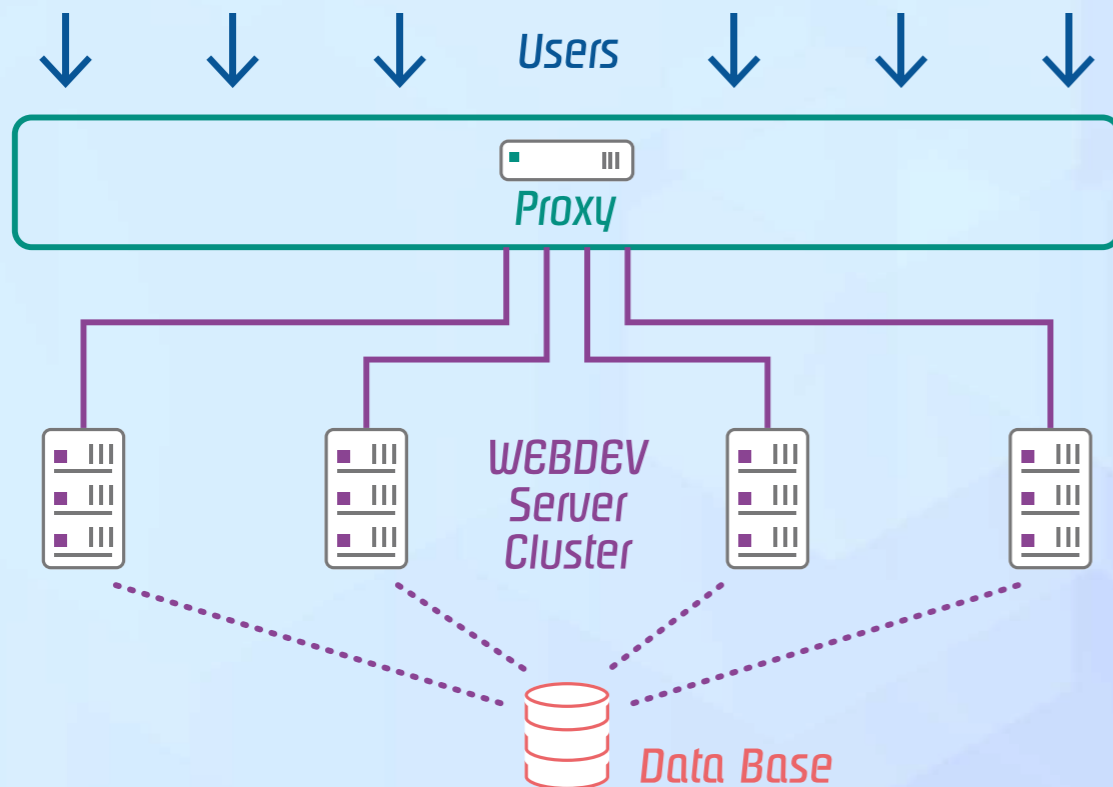
811 New feature WD WB WM DATABASES

The application server cluster works with all available databases.

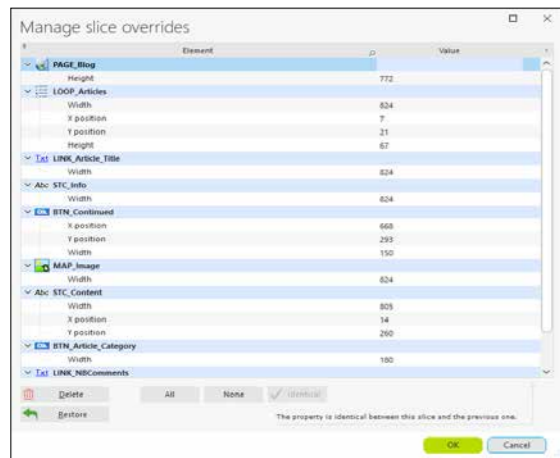
- HFSQL
- HFSQL Cluster
- HFSQL Spare
- External database
- Big Data database
- ...

The database has to be accessible from each cluster node. The database can be located on one or more physical servers or VMs: single server, cluster or a Spare server, on your premises or in the cloud...

Benefit provided by this new feature of version 27:
Use the database of your choice



controls in the slice and indicates the value of each override. You can edit the control directly from this list.



Overrides in a slice

Benefit provided by this new feature of version 27:
All at a glance

POPUP

814 New feature **WD WB WM**
POPUP: CONTEXT MENU FOR EASY EDITING

A context menu has been introduced in the environment to

edit popup pages more easily. This menu allows you to duplicate or delete a popup page, to access its description and its code.

Benefit provided by this new feature of version 27:
Simplified actions

815 New feature **WD WB WM**
POPUP: POPUP DISPLAY PROCESS

In version 27, a new process has been added in the code editor: the **Display popup** process. This process makes initializing popup pages easier.

Benefit provided by this new feature of version 27:
Initialization on demand

CHART

816 New feature **WD WB WM**
DISABLE AUTOMATIC LABEL COLORS IN CHARTS

In version 27, you can disable the feature that automatically sets a label color based on the background color, and select a custom color.

Benefit provided by this new feature of version 27:
You decide

TRANSFORM YOUR WINDEV APPLICATIONS INTO WEBDEV SITES: EASIER THAN EVER

817 New feature **WD WB WM**
WEBIFICATION MADE EASIER

Transforming your existing WINDEV applications (or parts of applications) into websites is easier than ever before. The split view in the environment allows you to edit windows and pages at the same time, which makes everything easier. The migration wizard simplifies the webification process.

Benefit provided by this new feature of version 27:
Transform WINDEV applications into websites or SaaS

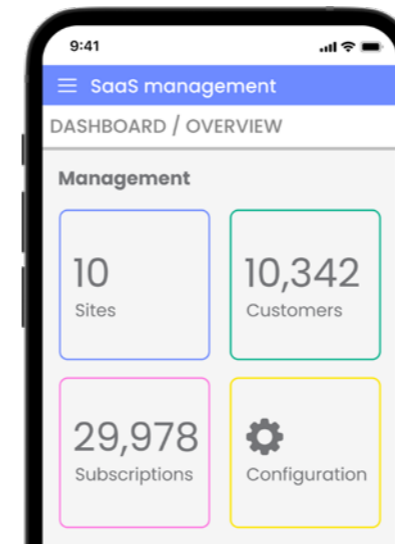


SAAS



818 New feature **WD WB WM**
MOBILE-FRIENDLY SAAS ADMINISTRATOR

The SaaS administrator becomes mobile-friendly: Manage your SaaS solutions from a smartphone!



Practical on mobile devices!

Benefit provided by this new feature of version 27:
When mobile really means mobile

SINGLE-PAGE APPLICATION (SPA)

819 New feature **WD WB WM**
SPA: NEW WLANGUAGE FUNCTIONS AND FEATURES IN BROWSER CODE

Single Page Applications require a significant amount of code on the browser side: WEBDEV 27 includes new features for creating Single Page Applications.

- New WLanguage functions in Browser code (see new features 867 to 873).
- New Edit control **Modification** process (see new feature 868).
- New **..Modified** property (see new feature 869).
- ...

Benefit provided by this new feature of version 27:
WEBDEV 27 is open to all architectures



SOCIAL NETWORKS

820 New feature WD WB WM
TIKTOK: OPEN A PROFILE PAGE



In version 27, a ready-to-use button in the "Social networks" category of the ribbon now allows you to open the TikTok profile of a given user.

Benefit provided by this new feature of version 27:
Directly access TikTok profiles

SERVER WLANGUAGE

821 New feature WD WB WM
ALL THE NEW WLANGUAGE FUNCTIONS IN VERSION 27 ARE AVAILABLE IN WEBDEV

WEBDEV Server code benefits from all the new WLanguage functions and features in version 27. See new features 104 to 126.

Benefit provided by this new feature of version 27:
Cross-platform code

822 New feature WD WB WM
3 NEW PROCESSES FOR WEBDEV SERVER CODE

3 new processes have been added in WEBDEV server code

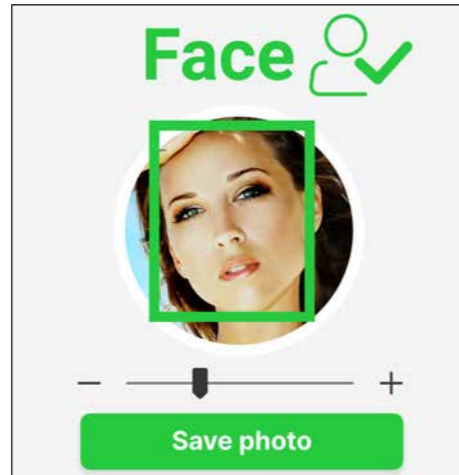
- After deploying the site
- Start the server
- Request server stop.

Benefit provided by this new feature of version 27:
Easily program particular cases

823 New feature WD WB WM
AI: OBJECT DETECTION



The new AI-based object detection feature is also available for your WEBDEV sites. Once an object is detected, your site can use any process you define: edit, save, crop, search an image... See new features 115 to 118.



Benefit provided by this new feature of version 27:
Search, find

824 New feature WD WB WM
MISCELLANEOUS

The **PageAddress** function supports the new **pdFullAuto** constant, which returns the URL with the protocol used to display the page: http or https.

Benefit provided by this new feature of version 27:
An "s" that really makes a difference

New feature WD WB WM

825 to 866 SERVER CODE: 42 NEW WLANGUAGE FUNCTIONS

WLanguage boasts 42 new functions in Server code, as well as 121 new constants (see full list on our website).

StringDeleteDuplicate	StringToNum	dBlur	Compare
CompareAscendingOrder	CompareDescendingOrder	EmailExportHTML	geoGetAddress
HClusterMasterNode	HTMLUnwrapAllChildren	HTMLWrap	HTMLWrapAllChildren
HTMLInsertAfter	HTMLInsertBefore	HTMLInsertLastChild	HTMLInsertFirstChild
HTMLModifyAttribute	HTMLRemove	HTMLRemoveAttribute	HTMLRemoveChild
HTransactionSavepoint	HTransactionRollbackToSavepoint	AIDetect	AIDetectModel
JSONToXML	LuhnCalculate	LuhnCheck	PDFAddWatermark
PDFAddImage	PDFNbSignatures	PDFGetSignatureDate	PDFGetSignature
PythonAddPath	PythonInitialize	PythonTerminate	PythonExecute
RedisSet	RedisGet	RegexSearch	RegexReplace
WebserviceWriteCustomHTTPCode	XMLToJSON		

NEW WLANGUAGE FEATURES IN BROWSER CODE

BROWSER WLANGUAGE

867 New feature WD WB WM
PAGEDISPLAY AVAILABLE IN BROWSER CODE: IT SIMPLIFIES EVERYTHING!

In version 27, the **PageDisplay** WLanguage function is available in Browser code. This simplifies programming.

Benefit provided by this new feature of version 27:
Less calls to the server

868 New feature WD WB WM
EDIT CONTROL: "MODIFICATION" PROCESS AVAILABLE IN BROWSER MODE

A Modification process is now available for Edit controls in Browser code. This makes it possible to check input as the user types, or to set up a responsive autocomplete feature. It is no longer necessary to systematically return to the server.

Benefit provided by this new feature of version 27:
Avoid JavaScript code

869 New feature WD WB WM
"MODIFIED" PROPERTY AVAILABLE IN BROWSER MODE

The **..Modified** WLanguage property is available in Browser code. This property allows you to add processes in Browser code.

Benefit provided by this new feature of version 27:
Avoid JavaScript code

New feature WD WB WM

870 to 873 4 NEW BROWSER WLANGUAGE FUNCTIONS

StringToNum	Returns the numeric value of a character string. This feature enables you to perform numeric calculations on strings.
TableInfoXY	Returns the column name, or the row or column index for a given position in a Table control.
WebSocketClientConnect	Connects to a WebSocket server
WebSocketClientConnectSSL	Connects to a secure WebSocket server.

Benefit provided by this new feature of version 27:
Enriched browser code

AJAX



874 New feature WD WB WM
AJAX RESULT IN A NEW TAB

Opening a new browser tab to display the result of an Ajax process makes no sense, and performs no action. To make debugging easier, a new UI error in version 27 notifies you if this occurs in your project.

Benefit provided by this new feature of version 27:
Useful debug information

AWP

875 New feature WD WB WM
TEST OF INTERNAL ACTIVE WEBDEV PAGE

Now you can directly test Internal Pages in AWP mode. You don't need to include the Internal Page into another page to start a test.

Benefit provided by this new feature of version 27:
Less actions

JSON

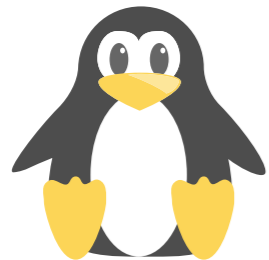


876 New feature WD WB WM NEW WLANGUAGE FUNCTIONS: JSONTOXML AND XMLTOJSON

The new `JSONtoXML` and `XMLtoJSON` WLanguage functions available in Server code allow you to easily convert JSON files to XML and vice versa.

Benefit provided by this new feature of version 27:
Interoperability

LINUX



877 New feature WD WB WM POWERFUL NEW FEATURES

The assisted universal replication site can be installed on a WEBDEV Application Server on Linux.

Benefit provided by this new feature of version 27:
More infrastructure options

New feature WD WB WM

878 to 922 45 NEW WLANGUAGE FUNCTIONS ON LINUX 45 new functions are available

on Linux:

StringDeleteDuplicate	StringToNum	dBlur	Compare
CompareAscendingOrder	CompareDescendingOrder	EmailExportHTML	geoGetAddress
HTMLUnwrapAllChildren	HTMLWrap	HTMLWrapAllChildren	HTMLInsertAfter
HTMLInsertBefore	HTMLInsertLastChild	HTMLInsertFirstChild	HTMLModifyAttribute
HTMLRemove	HTMLRemoveAttribute	HTMLRemoveChild	HTransactionSavepoint
HTransactionRollbackToSavepoint	AIDetect	AIDetectModel	JSONtoXML
LuhnCalculate	LuhnCheck	PDFAddWatermark	PDFAddImage
PDFNbSignatures	PDFGetSignatureDate	PDFGetSignature	PythonAddPath
PythonInitialize	PythonTerminate	PythonExecute	RedisSet
RedisGet	RegexSearch	RegexReplace	SocketConnectSSL
TestAddIteration	TestWriteResult	TestCheck	WebserviceWriteCustomHTTPCode
XMLtoJSON			

PHP



923 New feature WD WB WM PHP 8 SUPPORT



PHP 8 is supported in WEBDEV 27: you can generate PHP 8-compliant code.

Benefit provided by this new feature of version 27:
Keep up with the improvements in PHP

924 New feature WD WB WM JSON IN PHP

JSON serialization is available in PHP.

Benefit provided by this new feature of version 27:
New possibilities in PHP

925 New feature WD WB WM /= & *= IN PHP

The `/=` and `*=` syntaxes are available in PHP.

Benefit provided by this new feature of version 27:
New possibilities in PHP

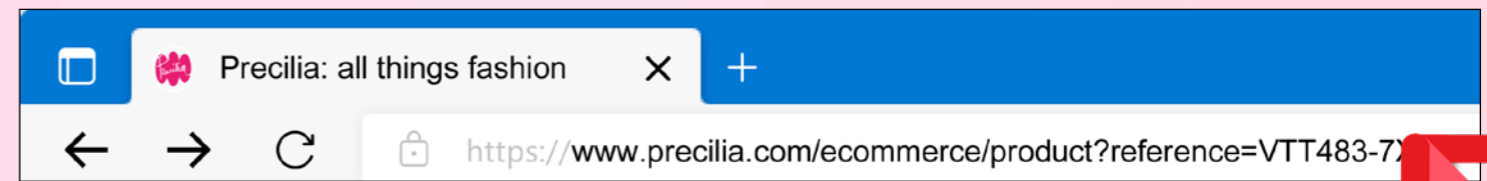
926 New feature WD WB WM 3 NEW WLANGUAGE FUNCTIONS FOR PHP

3 new functions are available in PHP:

StringToJSON	Converts a JSON string into a JSON variable.
StringToNum	Returns the numeric value of a character string. This feature enables you to perform numeric calculations on strings.
JSONtoString	Converts the content of a JSON variable to a JSON string

Benefit provided by this new feature of version 27:
WLanguage improvements

Continues page 88...



PAGES IN SESSION MODE: NOW SEO-READY

DEFINE A URL
FOR EACH PAGE

927 New feature WD WB WM USEFUL REMINDER

When you develop a site with WEBDEV, you can choose between 2 main architectures:

- standard mode, based on automatic sessions
- AWP mode, without sessions, which requires managing contexts programmatically.

Before version 27, there was no specific URL per page in session mode. This prevented developers from making this pages SEO-ready.

The only way to obtain SEO-ready pages was to use AWP. In version 27, a major improvement has been made: you can create SEO-ready pages, each with its own URL, in session mode.

Benefit provided by this new feature of version 27:
Keep reading

928 New feature WD WB WM NEW SEO-READY PAGES IN SESSION MODE

In version 27, you can make a page compatible with SEO in the 7-tab window.

This means (among other things) that:

- The page can be ranked among Google search results
- this page has a fixed URL, which can be copied, emailed and set as a bookmark
- there is no timeout to access this page
- URL rewriting is available
- ...

Programming SEO-ready pages becomes easy. No need to change your programming habits and automations.

Benefit provided by this new feature of version 27:
Access by URL, SEO, plus the advantages of Session mode

929 New feature WD WB WM "SEO-READY SESSION": HOW DOES IT WORK?

What happens when a user types the URL in a browser (or clicks it in a Google result)?

The WEBDEV application server detects that there is no active session for this user, so :

- it starts the creation of a session
- it executes the project initialization code
- it opens the requested page (without opening the "first page" of the project).

Once the session is created, all calls to the server benefit from the open session and are therefore much faster, compared to the AWP mode.

The other pages in this session are displayed automatically. Programming is as simple as usual.

Benefit provided by this new feature of version 27:
Simplicity and power

930 New feature WD WB WM PARAMETERS OF SEO-READY PAGES

An SEO-ready page in session mode requires parameters to obtain the data to be displayed.

These parameters should simply be passed via the URL.

Benefit provided by this new feature of version 27:
Standard procedure

931 New feature WD WB WM KEY POINTS

To create SEO-ready pages in automatic Session mode, there are a few requirements to be met:

- the references of the elements to be displayed should be passed as parameters
- you must use either a link, a "Link" button or the `..Url` property to open an SEO-ready page from a non-SEO-ready page, instead of calling the `PageDisplay` function in server code
- apply the usual SEO rules to optimize your pages: page content, ...
- since the page can be opened directly, you must use global variables with care, to avoid using a global variable that would not have been initialized when the page was opened.

Benefit provided by this new feature of version 27:
Simplicity

MANAGEMENT

932 New feature WD WB WM MOBILE-FRIENDLY WEB ADMINISTRATOR

In version 27, the Application Server web administrator becomes mobile-friendly.

It can be used on a smartphone, which can be very useful.

Benefit provided by this new feature of version 27:
Mobile Application Server

REST WEBSERVICES

933 New feature WD WB WM AUTOMATIC GENERATION OF DOCUMENTATION (OPEN API)

The Open API standard defines the structure of the documentation of a REST Webservice.

In version 27, the documentation of a REST Webservice is automatically generated.

Benefit provided by this new feature of version 27:
Standardized documentation created automatically.

934 New feature WD WB WM EDITOR: SEARCH IN REST WEBSERVICES

The search feature in the environment now also includes REST webservices.

Benefit provided by this new feature of version 27:
Search in REST Webservices

APPLICATION SERVER



935 New feature WD WB WM CLUSTER MODE

The cluster mode allows you to use an unlimited number of application servers to host a site.

This makes it possible to ensure a high number of connections with fast response times, or to easily adjust the number of application servers according to the workload.

See new features 809 to 813.

Benefit provided by this new feature of version 27:
Unlimited and flexible hosting

936 New feature WD WB WM SITE LIST: HIGHLIGHT ADMINISTRATION SITES

The Application Server home page displays a list of all sites and webservices deployed on this application server.

In version 27, administration sites (web admin, SaaS admin, HFSQL admin, etc.) are highlighted, allowing you to identify them immediately.

This also applies to the Telemetry, Replication and Private Store administration sites...

Benefit provided by this new feature of version 27:
Search no more

937 New feature WD WB WM NATIVE PYTHON CALLS

The Application Server in version 27 allows native calls to Python code.

This can be useful at any time.

Benefit provided by this new feature of version 27:
Compatibility

DOCKER DEPLOYMENT



938 New feature WD WB WM DEPLOY DIRECTLY FROM THE ENVIRONMENT

In the WEBDEV environment, when the generation of the site's Docker image is completed, the wizard prompts you to immediately deploy this image to GitHub. This starts building the previously configured Docker Hub image.

Benefit provided by this new feature of version 27:
Easily deploy to Docker Hub

DEPLOYMENT OF YOUR SITES

939 New feature WD WB WM PCSCLOUD PROFILES

The WEBDEV environment now remembers all active PCSCloud account profiles.

This avoids having to log in every time to complete setups on

multiple accounts or platforms.

Benefit provided by this new feature of version 27:
Hassle-free deployment

940 New feature WD WB WM DEPLOY TO PCSCLOUD VIA THE SOFTWARE FACTORY

In version 27, a new action allows you to deploy WEBDEV sites directly to PCSCloud.net.

Benefit provided by this new feature of version 27:
Automated deployment

941 New feature WD WB WM RESERVED APPLICATION SERVERS: NO LONGER MANDATORY

To use the telemetry, as well as replication and MBAAS servers, you needed to install Reserved WEBDEV Application Servers (provided as standard).

In version 27, you can use a standard application server for these features: you no longer need to install reserved servers if you already use an application server for your sites.

Benefit provided by this new feature of version 27:
Use your current infrastructure

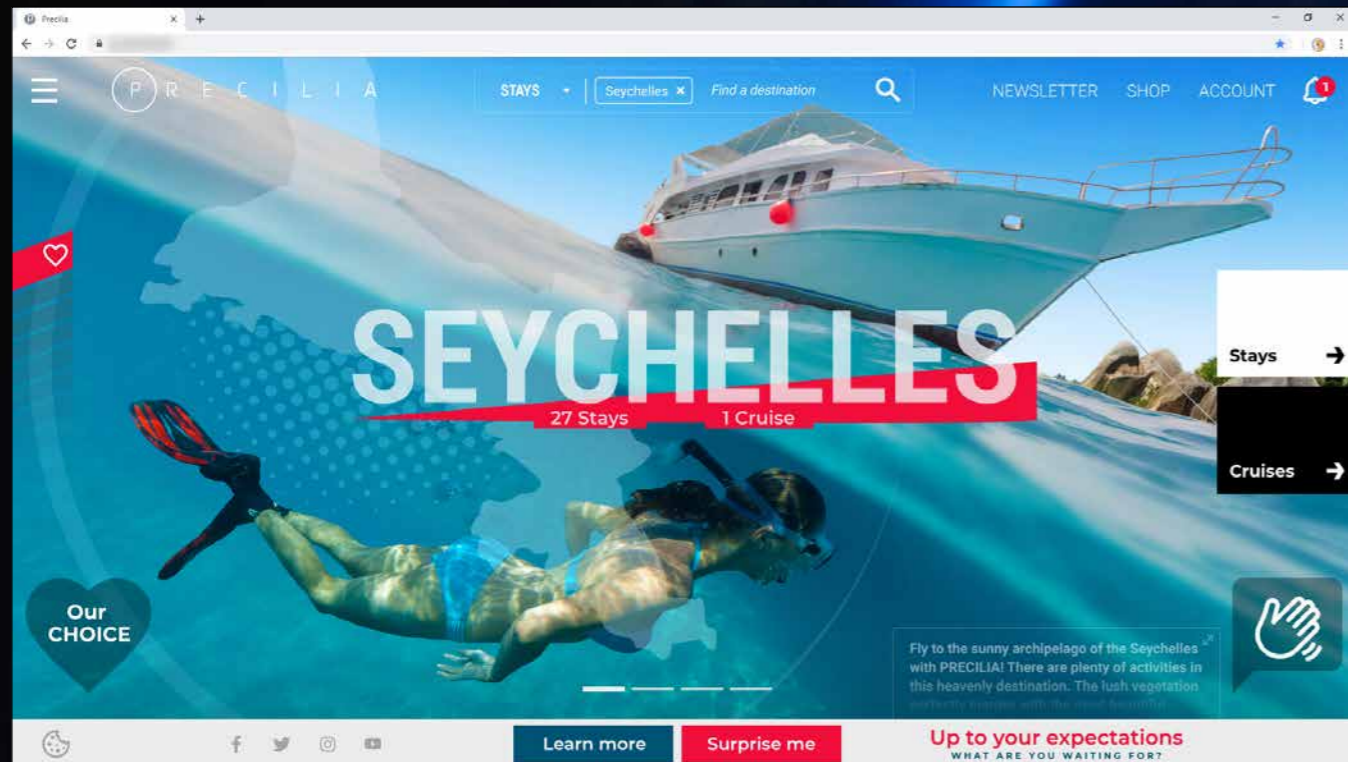
AND MUCH MORE...

942 New feature WD WB WM AND MANY OTHER NEW FEATURES

Version 27 offers many other new features that you will discover once you order and receive your software...



VERSION 27, A MYRIAD OF NEW FEATURES



YOUR
APPLICATIONS
ARE FASTER
AND MORE
BEAUTIFUL
IN VERSION

27

Your code is unique: Windows, Internet, HTML5,
Linux, Java, .Net, PHP, Mac, Webservice,
Android, iOS, Cloud, SaaS...

TECHNOLOGY DOES NOT WAIT: ORDER VERSION 27 TODAY

Order today! Before the release date, purchasing WINDEV, WEBDEV, or WINDEV Mobile 26 (excluding updates) from 9/1/2021 entitles you to a free upgrade (package and tutorials) to the corresponding version 27, as soon as available. Buying an update to version 27 before its release date and after 1/9/2021 enables you to get version 27 (package and manuals) for the difference in update price (excluding shipping costs). New versions are being announced now so you can plan on them when developing, and so you don't spend time developing features that will be included in the product. Some functions may not be available as soon as the version is shipped, but will be offered later as downloads. Also note that additional improvements and new features other than the ones described in this document may be available in the new version. WINDEV, WEBDEV and WINDEV Mobile are professional software. The amount of new features adds up to more than 927 since certain new features are related to multiple subjects and are presented more than once. Despite the care taken in creating this document, it is not contractual. Screenshots and lists are for illustration purposes only. Don't hesitate to contact us for any additional information or to learn more about a new feature. All the trademarks mentioned in this publication are registered trademarks of their respective owners.
Documentation version 1.02





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927

NEW FEATURES

TECHNOLOGY NEVER STOPS
ORDER VERSION 27
TODAY

Your code is unique: Windows, Internet,
HTML5, CSS, Linux, Mobile, Java, .Net, PHP,
Mac, Webservice, Android, iOS, Cloud, SaaS...

