

# WINDEV® Mobile

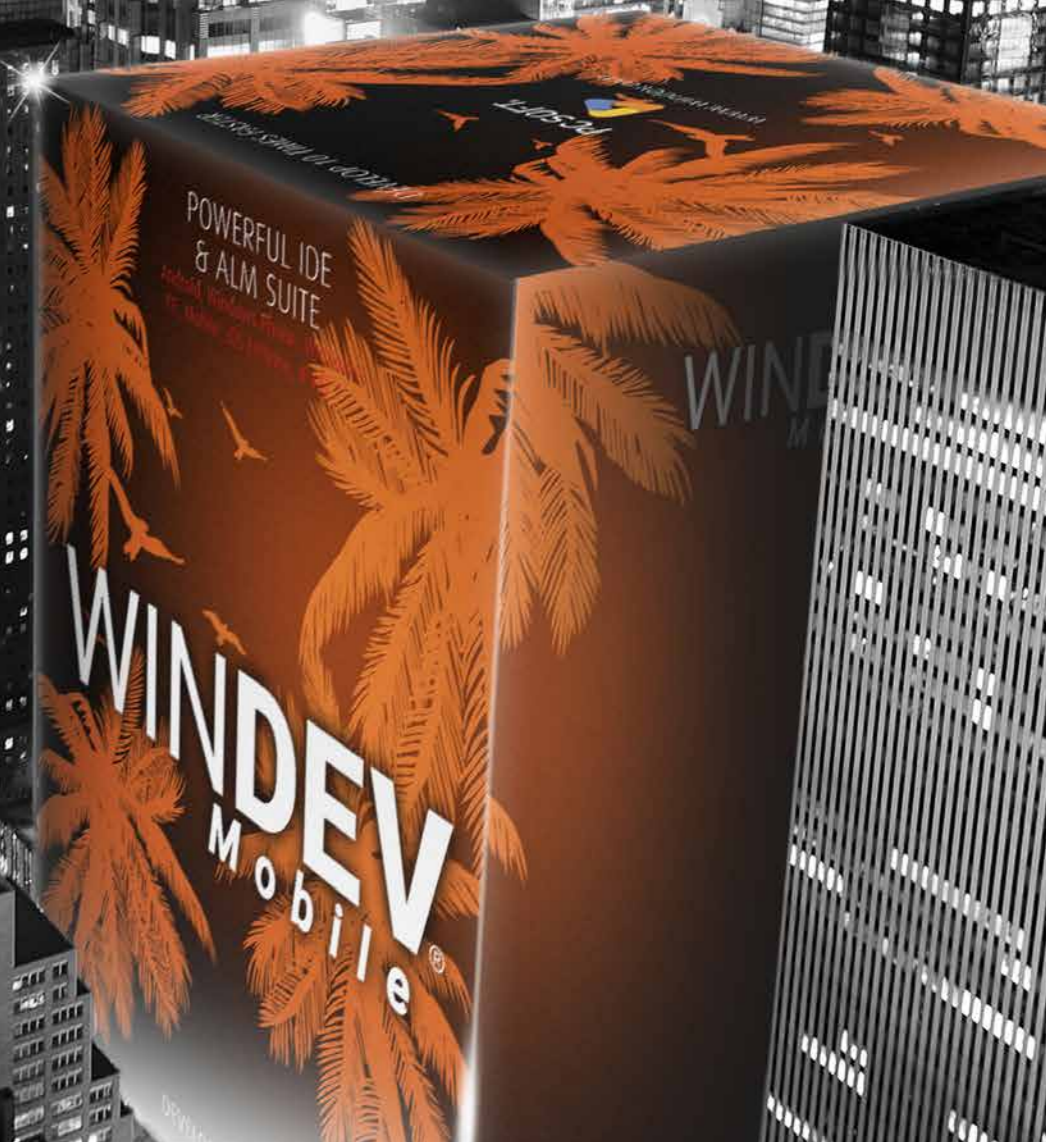


## MOBILE INTEGRATED DEVELOPMENT PLATFORM

Smartphone, Tablet, Mobile device

Android, iOS, UWP

CROSS-PLATFORM CODE:  
Windows, .Net, Linux, Java,  
PHP, Internet, Android, UWP,  
iOS, ...



# YOU CAN START DEVELOPING MOBILE APPS IN 10 MINUTES

"Network and telecom"

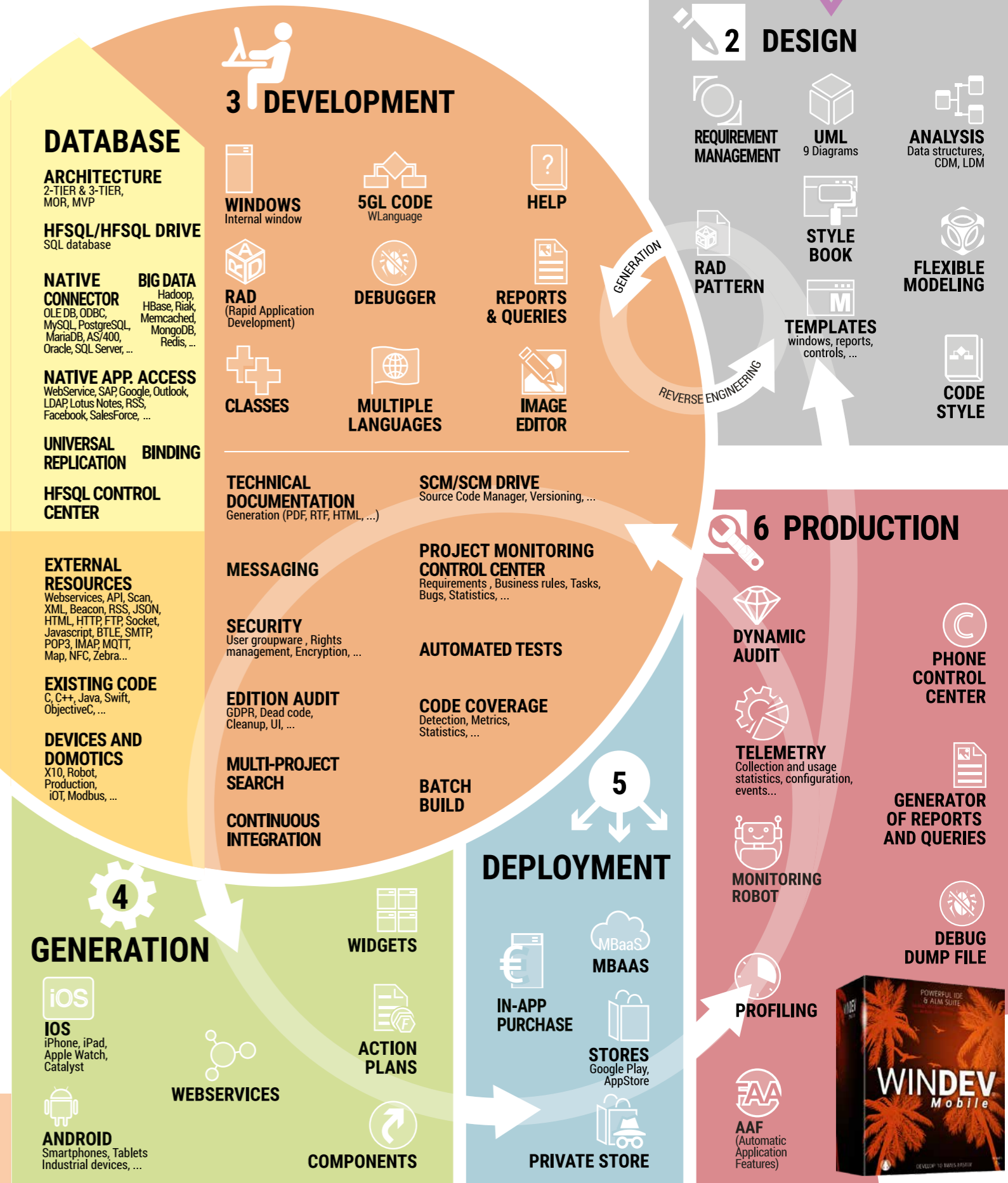
- WINDEV Mobile is fantastic for developing apps for Smartphones, Tablets, Industrial devices
- With WINDEV Mobile, you can develop native apps in no time
- Use the same code and windows for Android and iOS
- Easily reuse existing WINDEV applications
- Freely distribute your applications.



## CONTENTS

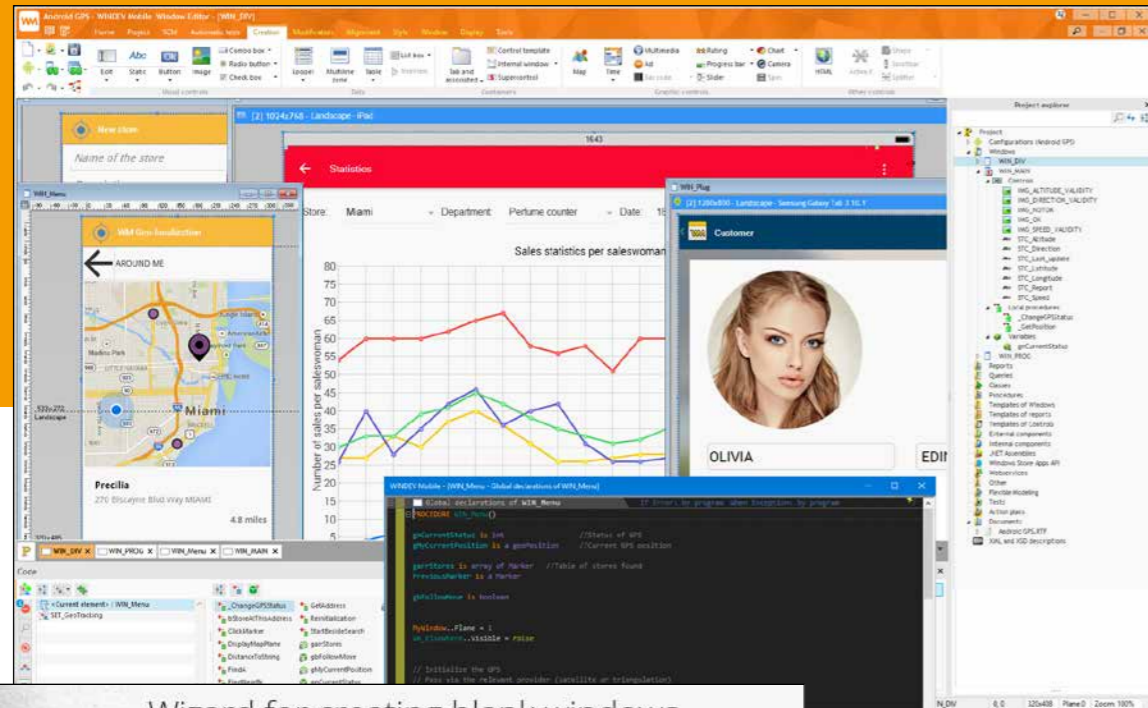
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# INTEGRATED DEVELOPMENT PLATFORM IDE - DevOps



# NATIVE DEVELOPMENT ON ALL MOBILES

A complete development environment, adapted to the mobile world



## DEVELOPMENT METHOD

### CREATE NATIVE APPLICATIONS FOR ANY MOBILE DEVICE

WINDEV Mobile makes it easy to create native applications for all mobiles: smartphones, tablets and industrial terminals. And if you have existing WINDEV or WEBDEV elements, you can reuse them.

### STANDALONE DEVELOPMENT ENVIRONMENT

The development method is the same, regardless of the target devices and operating system.

The development environment is integrated, powerful, complete, intuitive and it is adapted to the specifics of mobile devices.

With or without database, with or without connection to the Information System, developing for mobile devices has never been this easy.

### APPLICATION LIFECYCLE MANAGEMENT

WINDEV Mobile comes with all the tools needed to manage the entire application lifecycle: Window generator, 5GL, Debugger, Report Generator, Setup Generator, UML Analysis Generator, Project Dashboard, Collaborative Source Code Manager, Technical Documentation Generator, Schedule Management,...

### MOBILE-SPECIFIC FEATURES

WINDEV Mobile supports most common development functionalities, as well as specific functionalities for mobile devices, such as accelerometer, compass, GPS, 5G, SMS, bar codes, gestures, NFC, beacons, biometrics, speech synthesis, and more...

Integrating the various connection technologies (Bluetooth, Wi-Fi, infrared, GPRS, 3G, 4G, 5G, replication, synchronization, etc.) with your company's Information System is easier than ever with WINDEV Mobile!

# NATIVE & CROSS-PLATFORM APPLICATIONS



iPad/iPhone



ANDROID

One project (same code, windows, queries, reports) can compile native applications for Android, iOS, UWP. This project also allows you to generate applications for Windows, Linux, and websites. The universal portability of your source code makes sure you can reuse your team's programming resources.



### PROGRAM IN 5GL: 90% LESS CODE

WLanguage, a 5th generation language, lets you develop faster than a traditional language. Its advanced functions make it easier to write and read code, simplifying both development and maintenance (see pages 16-17).

A mobile RAD allows you to generate fully functional applications! (See page 10). Download WINDEV Mobile Express for free, to discover the ease of use and power of WLanguage.

### TOTAL INTEROPERABILITY

You can access the device's APIs. If necessary, you can code very specific processes.

### DO YOU ALREADY USE WINDEV?

Develop in WLanguage as usual, with the added benefit of a familiar environment and the possibility of reusing your existing code. You can open WINDEV Mobile projects directly in the WINDEV environment.

### COMPATIBILITY WITH WINDEV APPLICATIONS

Do you have WINDEV applications? The compatibility between WINDEV and WINDEV Mobile is impressive: code, classes, queries, controls, reports, analyses, UML... You can reuse and share most of the code, classes, queries and windows (UI). Database programming is the same.

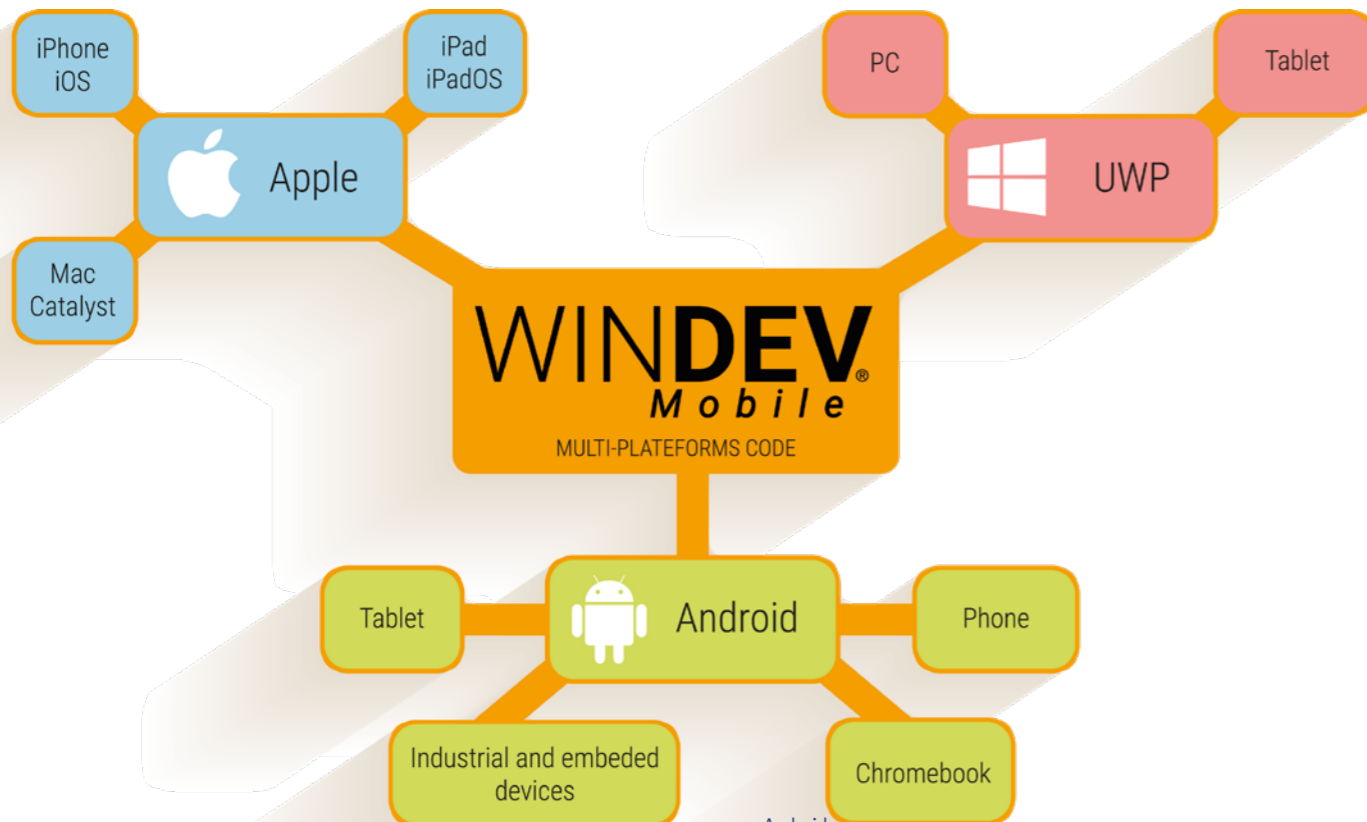
Since mobile device screens are smaller, you just need to resize the WINDEV windows, and enlarge the buttons to easily tap on them... which is very easy!

A wizard analyses your WINDEV project and helps you to adapt your app to mobile devices. This allows you to reuse your existing elements on mobile devices (see page 33).

**FREE EXPRESS VERSION**  
Download now!



# APPLICATION PORTABILITY



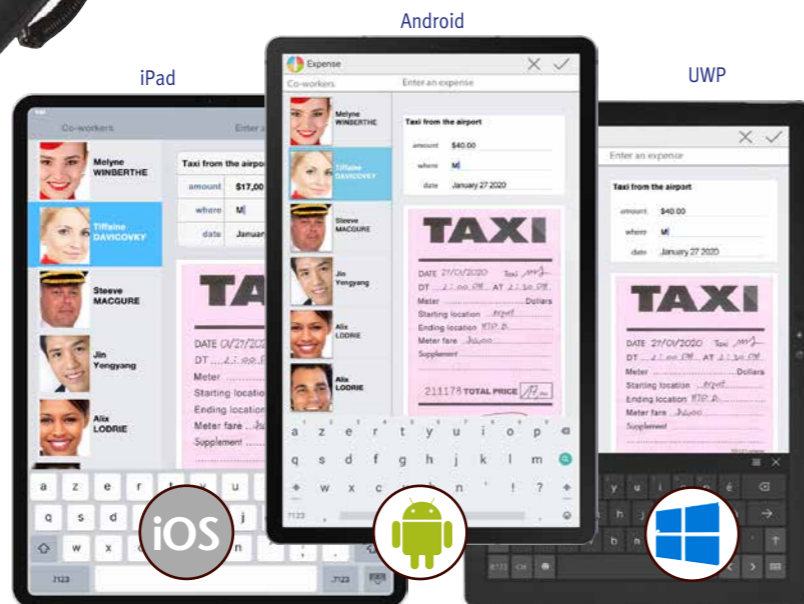
## ANDROID, IOS, UWP

With WINDEV Mobile, one single project can be compiled for different mobile OS: iOS, Android, UWP,...

Simply recompile your project!

## ANY TYPE OF MOBILE

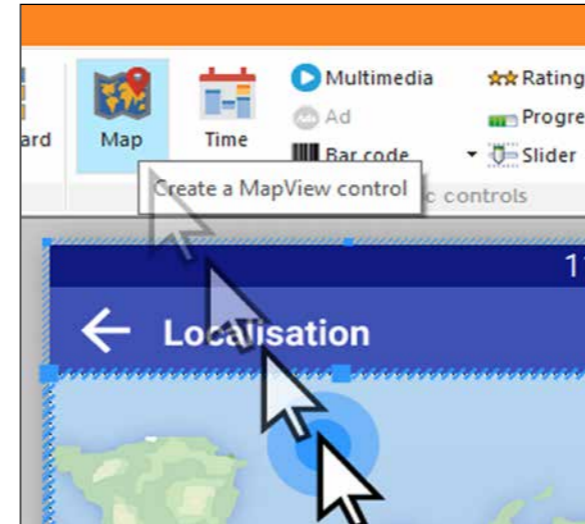
Develop for any type of mobile: phones, smartphones, terminals, rugged terminals, tablets, chromebooks,...



# WINDOWS

## CREATE CONTROLS USING DRAG & DROP

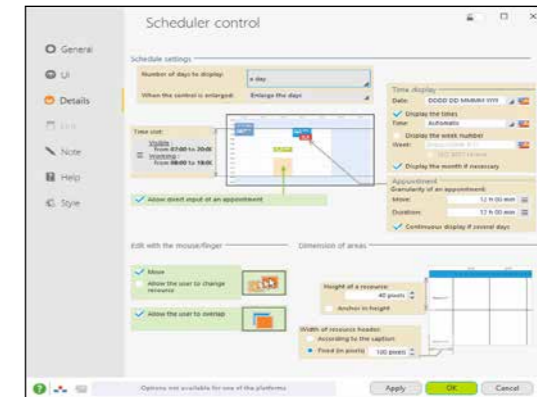
Controls are created and positioned visually, by selecting the type of control from the ribbon and dropping it in the desired location inside the window.



## THE "7 TABS": REVOLUTIONARY

Once the control is positioned, simply define its characteristics (required input, mask, graphic look, link with the database, anchor, etc.) using the "7 Tab" technology.

The enter the code in the corresponding events: entry in control, exit from control, hover,...



## POWERFUL VISUAL EDITOR FOR USER INTERFACE (WINDOWS AND CONTROLS)

First of all, note that the same window created with WINDEV Mobile works on all systems: iOS, Android, Windows, respecting their standards.

WINDEV Mobile offers the most efficient UI (windows and content) generator on the market.

The window creation process is clear and user-friendly.

The WINDEV Mobile window generator enables you to create great-looking, user-friendly interfaces, quickly and without any specific skills.

## TEST YOUR APPLICATIONS INSTANTLY

Clicking on the "GO" icon allows you to test the window and the application being developed, directly on the development computer. This test can also be run directly on the device.

## CROSS-PLATFORM

Thanks to the Adaptive Design and the anchors, the windows of an application can be used on all devices and screen sizes.

## ALL SCREEN RESOLUTIONS AND DPI.

WINDEV Mobile supports all sizes, screen resolutions and DPIs.

The portrait and landscape modes are supported.

## VERY POWERFUL CONTROLS

In WINDEV Mobile, a control is a very powerful concept that saves hundreds of lines of code.

WINDEV Mobile controls allow you to create user-friendly windows, simply dragging and dropping them in the window editor.

Edit controls offer numerous automatic features, input masks and security checks, without having to write one line of code: mandatory input, convert to uppercase, allowed types of characters in input, direct link to the database, and more.

These features are defined from the window editor using the "7-tab" technology. If necessary, they can be modified by programming.

## ANIMATIONS

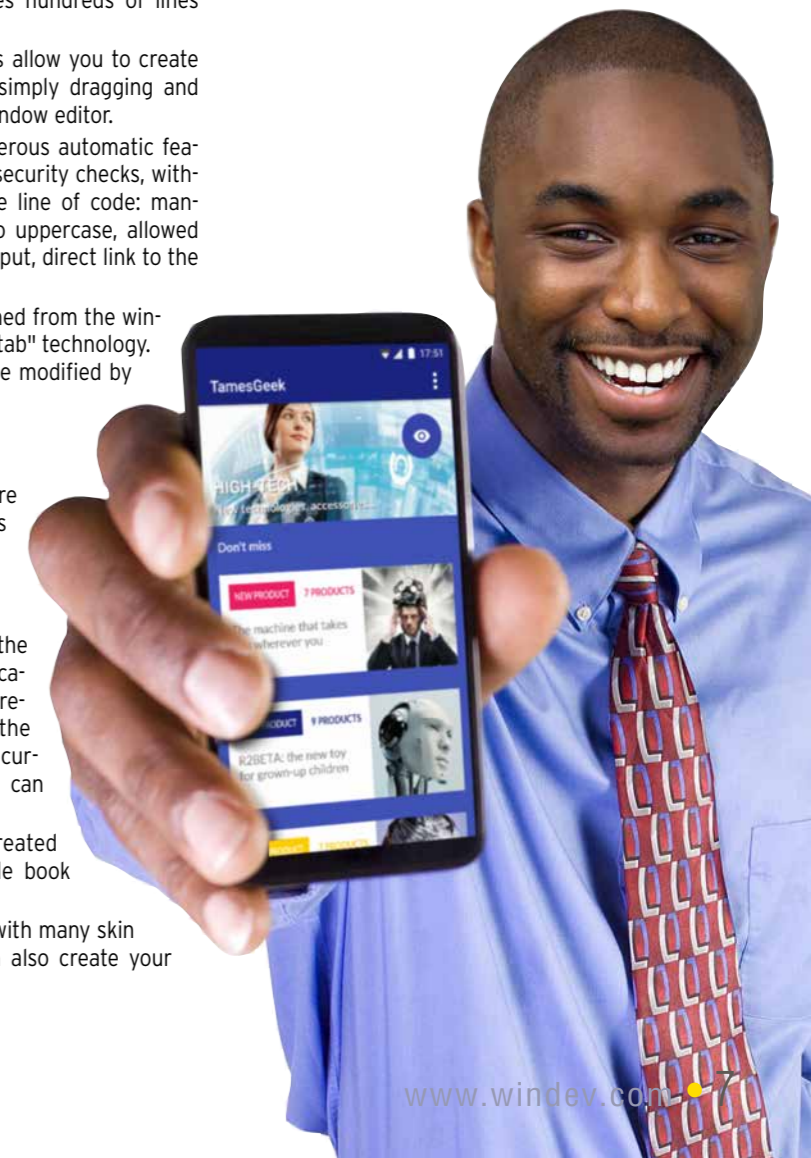
Numerous animations are available for controls and windows.

## STYLE BOOK

A skin template defines the style book of an application. By default, the created controls adopt the characteristics of the current skin template, but can of course be modified.

The interfaces you created always respect the style book you have chosen.

WINDEV Mobile comes with many skin templates, and you can also create your own (see page 13).





# ONE WINDOW FOR ALL SCREEN SIZES

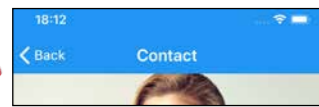
## COMMON IOS & ANDROID WINDOW IN THE STANDARD OF EACH SYSTEM

The windows of an application must respect the standard of the devices on which they run!

For example, on Android, the application must have a "toolbar" at the top of the windows.



On iOS, a different bar is used.



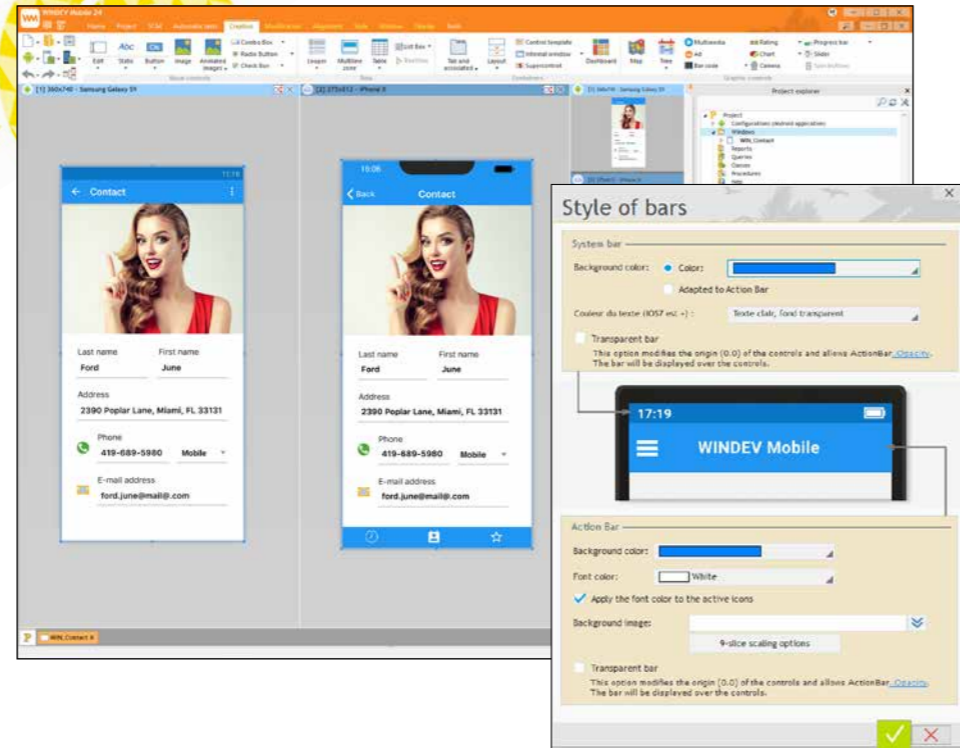
WINDEV Mobile allows you to create windows that automatically comply with Android and iOS standards. No programming is required.

When describing the window in the "7 tabs", simply define the common properties and those that are specific.

You edit and maintain one single window for both iOS and Android.



Note: Android devices use **Toolbars**, and Apple devices use **Navigation Bars**: it's **automatic**.



Note the different position of the controls based on the screen's orientation. The developer sets each position.

If there is one thing that changes from one mobile device to another, it's the size of the screen!

Even on the same device, there are 2 display options: portrait and landscape!

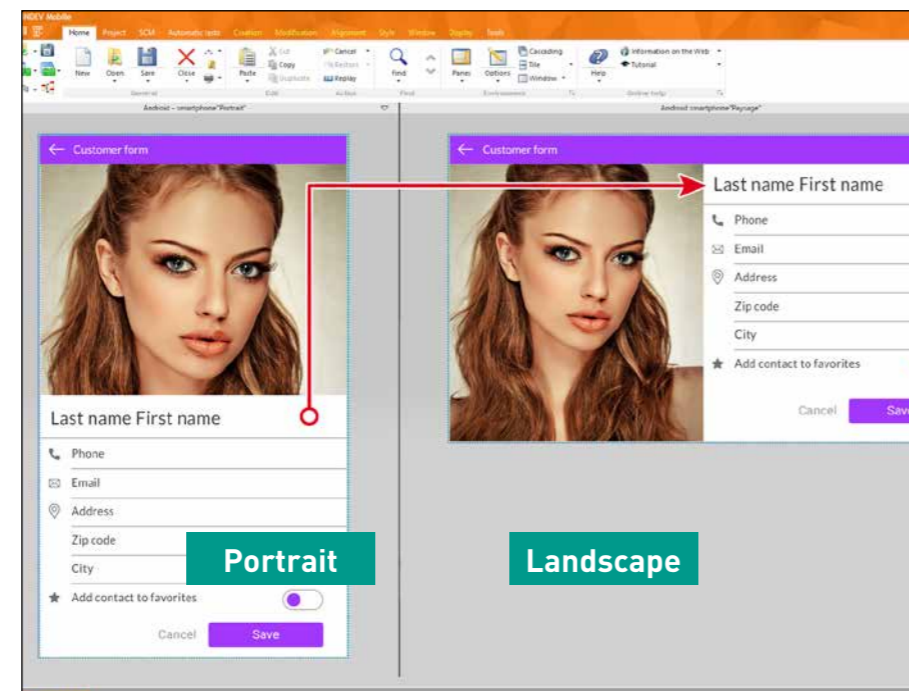
How to develop easily and only once for all these different modes?

It's easy with Adaptive Design and anchors in WINDEV Mobile.

## DIFFERENT CONTROL POSITIONING DEPENDING ON THE ORIENTATION (PORTRAIT/LANDSCAPE)

The position of the controls often differs based on the device's orientation. For example, in portrait mode, text is placed under an image, but in landscape mode it is next to the image.

In the WINDEV Mobile editor, you can position controls differently in the same window, depending on its orientation, without having to code anything.



## THE LAYOUT CONTROL

A control can be hidden by programming. The Layout control in WINDEV Mobile allows for the automatic repositioning of the other controls in the window at runtime. This prevents gaps in the interface.

## MULTIPLE EDITING TABLET ↔ PHONE, PORTRAIT ↔ LANDSCAPE, IOS ↔ ANDROID

When creating or modifying a window, it is possible to view its layout in real time in several configurations: in another system, in portrait or landscape, on phone or tablet.

Different phones and tablets have different screen sizes, etc.

This multiple visualization is very useful to check the result of anchors.

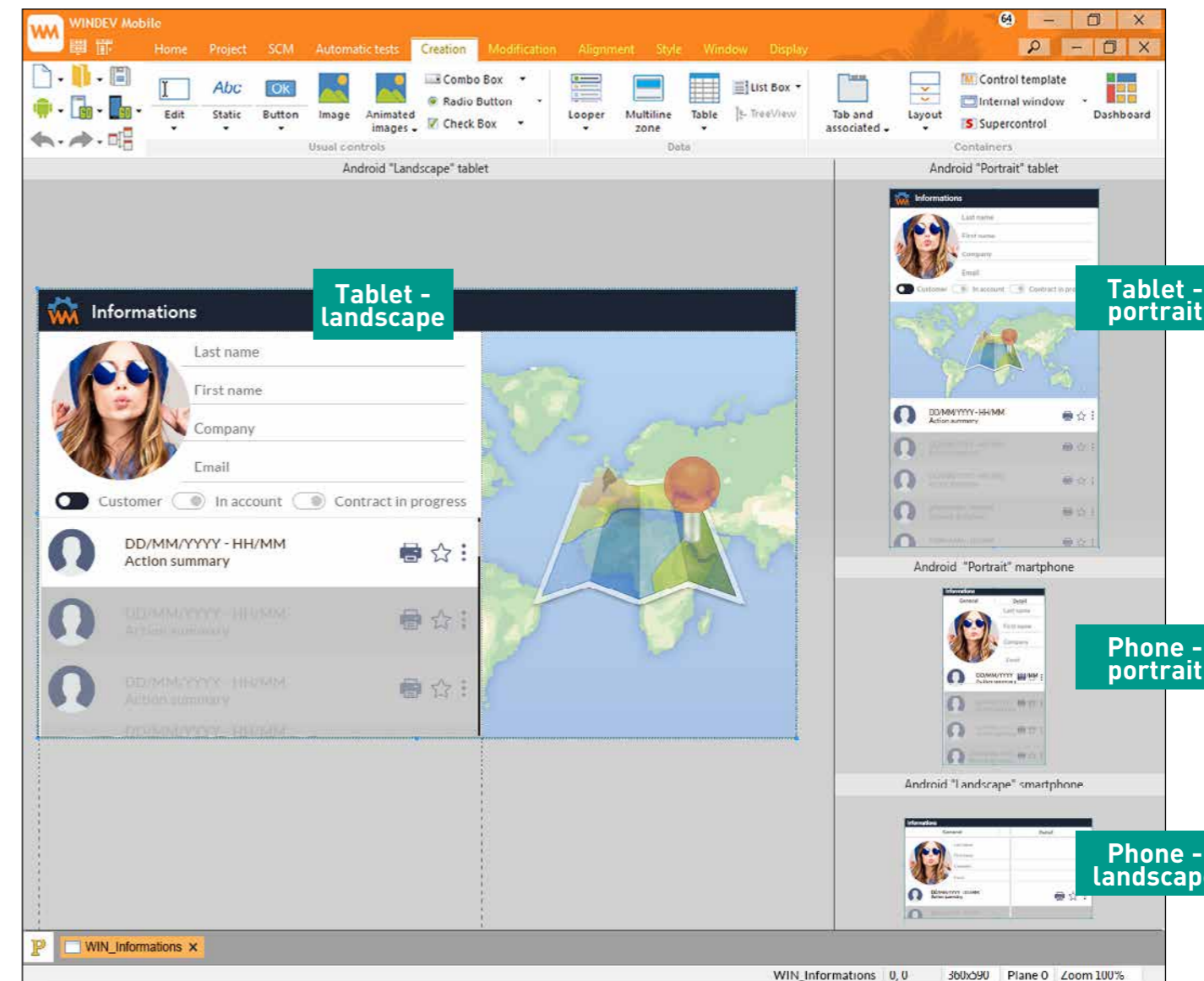
You can immediately see the impact of a modification on other targets.

At runtime, the application automatically selects the screen layout to use, depending on the resolution of the device and the orientation.

Everything is dynamic.

When a control is added to a window in edit mode, it automatically comes up in all the other views.

Multi-view editing is completed by the view panel presented on the next page.



## VIEW AND CHECK YOUR WINDOWS ON ALL DEVICES: THE VIEW PANEL

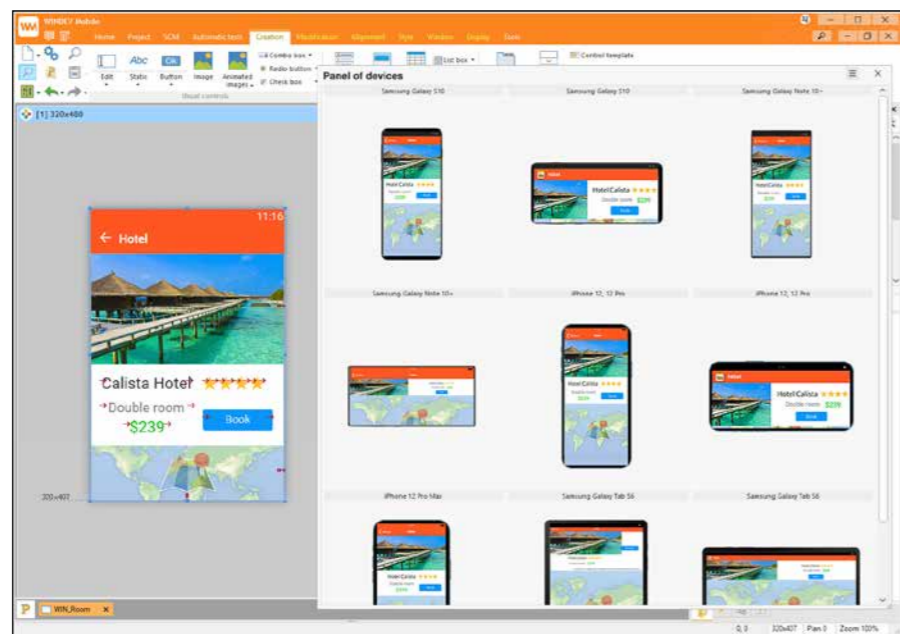
Phones have different screen sizes and definitions.

At any time, the view panel allows you to simulate the behavior of your windows (anchors and layouts) on a set of devices you have defined: iPhone 12, iPhone X, Samsung Galaxy S21, Google Pixel, iPad Pro, etc.

You see the actual result on each device. The "panel" viewing mode allows you to make sure the interfaces fit the target devices:

- correctly positioned anchors
- management of landscape/portrait mode
- appearance on screens with different resolutions
- verification of layouts: proper dissociation of sizes, positions and anchors
- font compatibility
- ...

The view is displayed in real time. Each device can be zoomed in. Clicking a device starts a window test (GO) in order to check the behavior and navigation (UX).



The panel is updated in real time in the editor: you can immediately see the results of your modifications

Legend: the blue bar above a subject title indicates the systems for which the functionality is available as native. ANDROID, IOS, UWP

## THE RAD

### MOBILE RAD: WONDERFUL WINDOWS

Need to quickly generate a Form Management application using the tables (data files) from the analysis? That is what the RAD is made for!

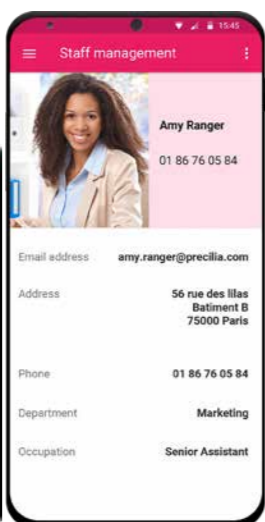
2 types of RAD are available: a generic RAD for phones and tablets, and a tablet-specific RAD.

The tablet-specific RAD identifies the larger

screen size and shows more elements. The WINDEV Mobile RAD offers 14 patterns.

### RAD FOR PHONES

Several window patterns are available. These patterns are adapted to phone screen sizes, and can be used both on phones and tablets.



- Image + Read-only form
- Image + Form in edit
- Image + Long text
- Editable form
- Form + Looper
- Image gallery
- Looper
- Multiline Zone
- ...

### RAD FOR TABLETS

Several tablet-specific RAD patterns are available. These patterns are designed for tablet screen sizes. They automatically adapt to the orientation of the screen.

Examples of patterns for tablets:

- Image + Read-only form
- Image + Form in edit
- Image + Long text
- Image gallery
- Looper + Read-only form
- Multiline Zone + Read-only form
- ...

### RAD: THE GENERATED CODE

When creating a window using the RAD, different wizards asks questions adapted to each pattern: tables to be used, level of detail in the form,...

The links with the data are automatically generated.

The RAD generates code that is clear and easy to understand, reuse and maintain.

## CONTROLS



### "7 TABS" TECHNOLOGY

The characteristics of the controls are defined through the "7-tab" technology: a few clicks is all it takes to define controls and their granular and powerful characteristics.



### THE CONTROLS

All types of mobile controls are available. Note that these controls are compatible with the applications and sites developed in WINDEV and WEBDEV.

Each control integrates dozens or hundreds of automation and security features.

Each control is so future-rich that it takes hundreds of pages to describe them!

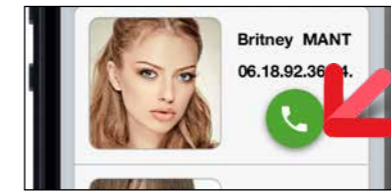
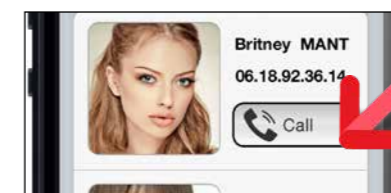
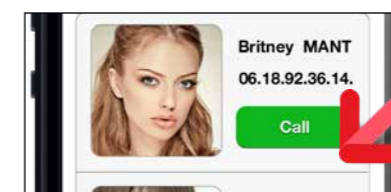
To discover all the characteristics available for each control, we recommend trying the Express version of WINDEV Mobile for free.

### CONTROL STYLES

A style defines the characteristics of a control. By using the different styles, each control adapts to the application's style book.

A large number of styles are provided, and you can create your own. Styles support inheritance.

Among the many style parameters, you'll find: character size and font, edit control background image, modification of the radio button and check box images, customization of the selection band for looper controls and list boxes, customization of the combo box display, support for simple and rounded borders, ...



3 different styles. Here, the Call button adopts a new style with 1 click

### EDIT CONTROL

The "edit" control (input) is used to enter and display data. The virtual keyboard comes up in edit mode if the device doesn't have a physical keyboard. Over 50 properties are available for edit controls: required input, data type, mask, alignment,...

To discover all the properties available on each control, try WINDEV Mobile Express for free!

### TOKEN EDIT CONTROL



The token "edit" control allows you to create modern interfaces: view choices, select options,...

### DATE AND TIME

The date or time edit control lets you display or enter the date and time based on the device used.

ANDROID, IOS, UWP

### STATIC

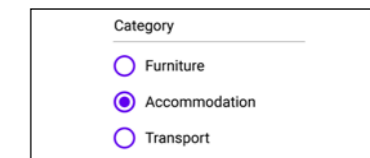
The "Static" control lets you display information, from your code, a process or a database. Everything can be customized: font, color, border,...

The caption can be formatted: currency, etc,...

ANDROID, IOS, UWP

### RADIO BUTTON

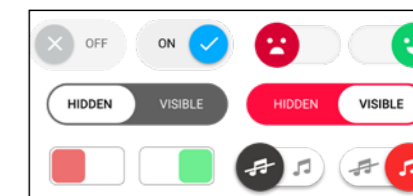
The "Radio Button" control allows the user to select an option.



ANDROID, IOS, UWP

### CHECK BOX

The "Check Box" control allows you to make selections in a list of choices.



ANDROID, IOS, UWP

### BUTTON

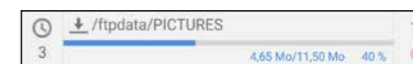
The "Button" control lets you trigger an action. Like with all controls, this style is customizable: size, font, color, icon,...

The round buttons and the floating buttons are automatically generated.

ANDROID, IOS, UWP

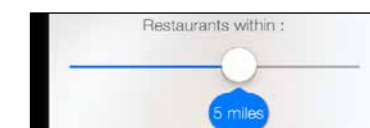
### PROGRESS BAR CONTROL

The "Progress Bar" control lets you display a progress bar to visually show the progress of a process.

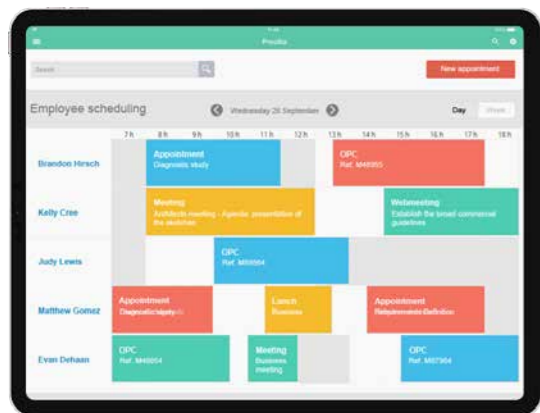


ANDROID, IOS, UWP

### SLIDER CONTROL

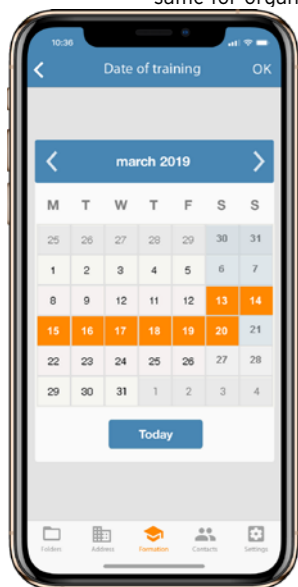


The "Slider" control is available. A style can be applied to the slider.



## SCHEDULER AND ORGANIZER

The "Scheduler" control lets you easily manage schedules. You can literally manage tasks with one finger: create tasks, move them, ... same for organizers.



## CALENDAR

The Calendar control lets you display and select dates or ranges of dates.

The control supports gestures.

## LIST BOX

The "List Box" control is used to display a list of information defined by the program, sent by another process or read in a database.

## MENU

The "Menu" control allows you to create a menu that will start processes.

## MAP

The Map control is used to display a Google Map (or an Apple map on iOS).

The map displayed is interactive: you have the ability to zoom, move, ...

The Map control includes many powerful features: it allows you to find locations, create routes, display points of interest (POIs) and itineraries, define geographic areas, display road traffic in real time, switch to dark theme, etc...

For example, the **Marker** type is used to position POIs on a map.

WINDEV Mobile's Map control supports the automatic calculation of clusters. The

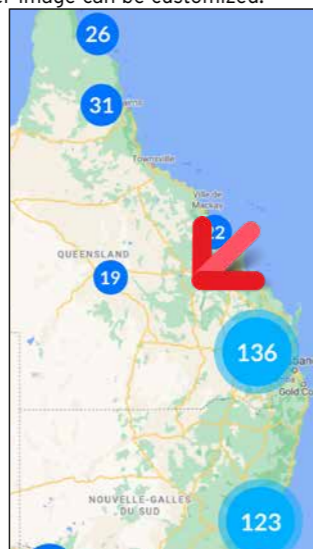


Google Maps with markers



Example of markers

cluster image can be customized.



WINDEV Mobile automatically calculates clusters

The **MapAddItinerary** WLanguage function is used to easily define a route, or to display the road traffic in real time.



The itinerary is defined by the application in WINDEV Mobile

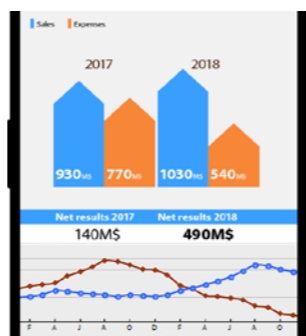
## PASSWORDS: USER GROUPWARE

A powerful User Groupware allows you to secure access to your applications. It features a powerful and fine management of accounts and privileges.

Some controls may be automatically hidden or shown, depending on the user's privileges: for example, only a sales manager or a buyer can see the quantity left in stock.

## EASY CHARTS

A chart designer is available with WINDEV Mobile: you create charts on Mobile devices without any programming. Data is displayed in real time.



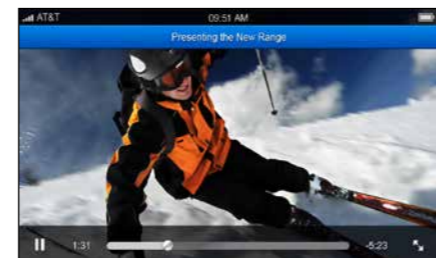
## INTERNAL WINDOW

The "Internal Window" control allows you to easily re-use an existing window inside another window.

## PLANES

In the windows, you can use controls on multiple planes.

## PLAYING VIDEO



The "multimedia" control allows you to automatically play video and audio files. The popular audio and video formats are supported: MP3, AVI, Wav, ...

## CONTROL TEMPLATE: INHERITANCE

The "control template" notion allows you to manage inheritance and overloading code and properties for all the types of controls.

## PERSISTENCE OF CONTROLS

When the "persistence" option of the control is checked, the content of the control is stored between 2 starts of the application. This prevents the user from having to reenter a piece of information that comes back often: date, etc.

## LOOPER

The "Looper" control lets you display a set of controls by rows, often filled from a database.



Horizontal scroll



Horizontal scroll

The content and height of each row can be different.

Gestures are supported: the finger gestures on a line (to the right or to the left) allow you to start a custom process or to automatically display the "Delete" button or a series of buttons.

The Looper control automatically manages breaks.

"Pull to refresh" is supported.



## TABLE CONTROL

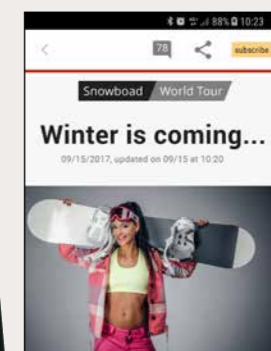
The "table" control uses the powerful functionalities of the WINDEV table control.

The horizontal and vertical scroll is touch-controlled. Input is automatically managed. Sorting and searching are also supported. "Pull to refresh" is supported.

## HTML CONTROL

The "HTML" control is used to display content in HTML format: the tags are interpreted, the links are automatically active: ideal for presenting information.

The "HTML Editor" control also allows input in HTML format. The "HTML Editor" control can interact with WLanguage and JavaScript.



## DASHBOARD CONTROL

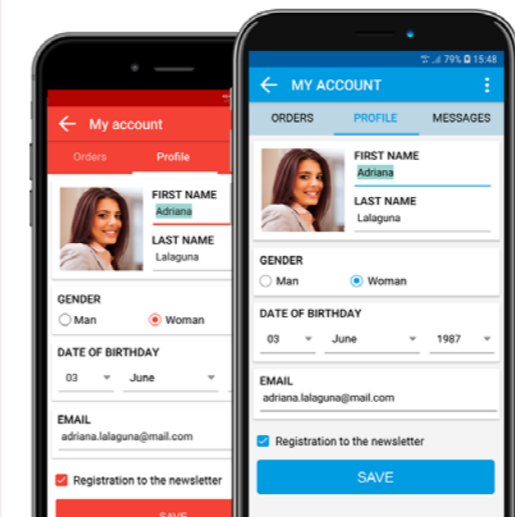
The "Dashboard" control automatically manages widgets. End users can arrange the widgets as they wish, delete them, resize them, ...



## LARGE NUMBER OF SKIN TEMPLATES PROVIDED

In order to easily define a look of your applications, a large number of ready-to-use skin templates are provided.

They allow you to automatically apply a look to the windows of your applications.



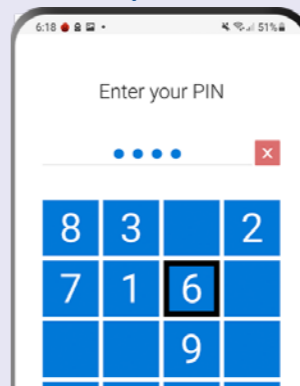
## 28 SMART CONTROLS INCLUDED

The Smart control concept allows you to implement ready-to-use controls in your applications, with standard, sophisticated, fully-configured and customizable functionalities.

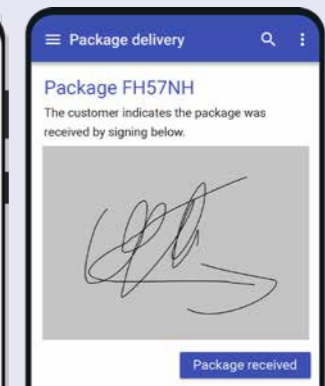
Among the Smart controls provided with WINDEV Mobile, you will find: • unlock pattern • PIN code input • timer button • download button • counter • Facebook login • gallery • clock • bar code reader • menu with round buttons • PIN code input • voice input • color picker • date and date range picker • language selector • finger signature • dashboard • different looper control templates • ...

You will save a lot of time and benefit from a state-of-the-art UI: your applications will feature powerful controls without having to set anything up...

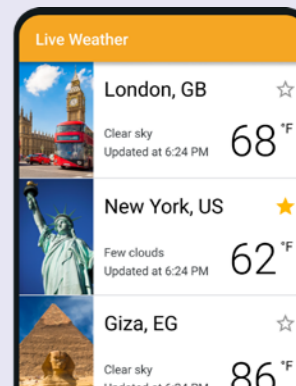
## COMMENT/RATING



## FINGER SIGNATURE



## WEATHER - LOOPER WITH WEBSERVICE CALL



## TOOLBAR NAVIGATION BAR

ANDROID, IOS, UWP



"Toolbar" (Android)

You can customize the Toolbar (Android) and Navigation Bar (iOS): icons, context menu, "back" button, tabs, ...

The same control allows you to create both the Toolbar and Navigation Bar (common Android/iOS interface, see page 8).

## CAMERA/PHOTO CONTROL

ANDROID, IOS, UWP

The Camera control directly displays the images captured by the front or back phone camera.

Photos and videos are supported.

The Camera control can also be used to decode bar codes.

You can also save images and videos (JPG and PNG, mpg videos, 3gp).

This control also lets you display photos and videos.

The event **click on camera control** allows you to execute a process when this control is clicked, such as triggering the photo or video recording (then stopping it).

For example, a real estate agent can take pictures and the app can automatically include them in the inventory of fixtures, and send them automatically to headquarters.

## IMAGE

ANDROID, IOS, UWP

The "Image" control lets you automatically display images and pictures. The photo can come from a database, be modified by programming,...

The popular formats are supported: JPG, PSD, PNG, PDF, SVG, BMP...

Different display modes are managed: homothetic, centered, 100%, ... Zooming and finger scrolling are also automatically managed.

## IMAGE GALLERY

ANDROID, IOS

The "image gallery" control allows you (without programming) to manage a set of images, how to cycle through them, how to display the selected image, etc.

## DISPLAY BAR CODES ON THE SCREEN

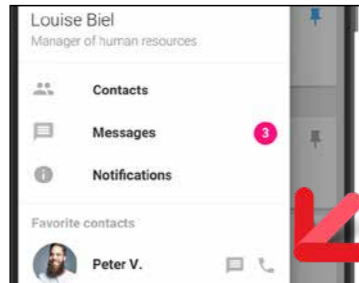
ANDROID, IOS, UWP



The Bar Code control allows you to display Bar Code on the screen: reward card, cafeteria card, door opening,...

## SLIDING MENU SLIDING WINDOW

ANDROID, IOS, UWP



Sliding window. The window below appears grayed

A window can appear from the left or from the right of the screen.

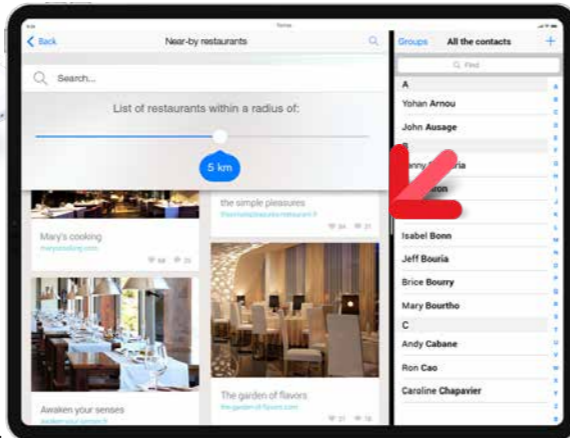
The window that appears can be partly displayed above the previous window, or it can partly shift this window.

The window can come up via a user gesture, or by programming.

## SPLIT WINDOW

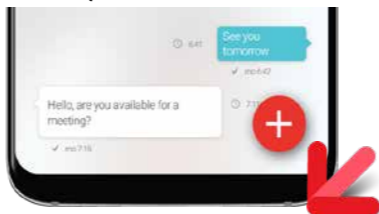
ANDROID, IOS

On devices that support split view, 2 windows from 2 different WINDEV Mobile applications can be displayed simultaneously side by side.



## BUTTON FIXED ON THE SCREEN (FLOATING IN THE WINDOW)

ANDROID, IOS



A floating button is fixed on the screen: it floats in the window.

This button will always be visible regardless of the scroll performed by the user.

This type of button allows you to create applications with a Material Design-based style.

## TAB

ANDROID, IOS, UWP

The "Tab" control lets you create tabs, which themselves contain other controls and processes.

When navigating between tabs, transition effects automatically come up.

The "swipe" gesture is available.

## NATIVE IOS & ANDROID FONTS

ANDROID, IOS

iOS uses character some fonts that are specific to Apple: AppleGothic,...

Android also uses its own fonts.

When developing on the PC, WINDEV Mobile lets you use these specific fonts in the window editor.

If this font is not available on Windows, a substitute font is used temporarily.

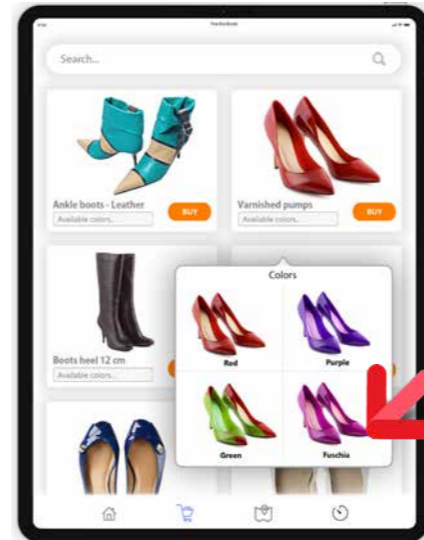
At runtime, the native font will be used.

## POPUP

ANDROID, IOS

You can open Popup windows.

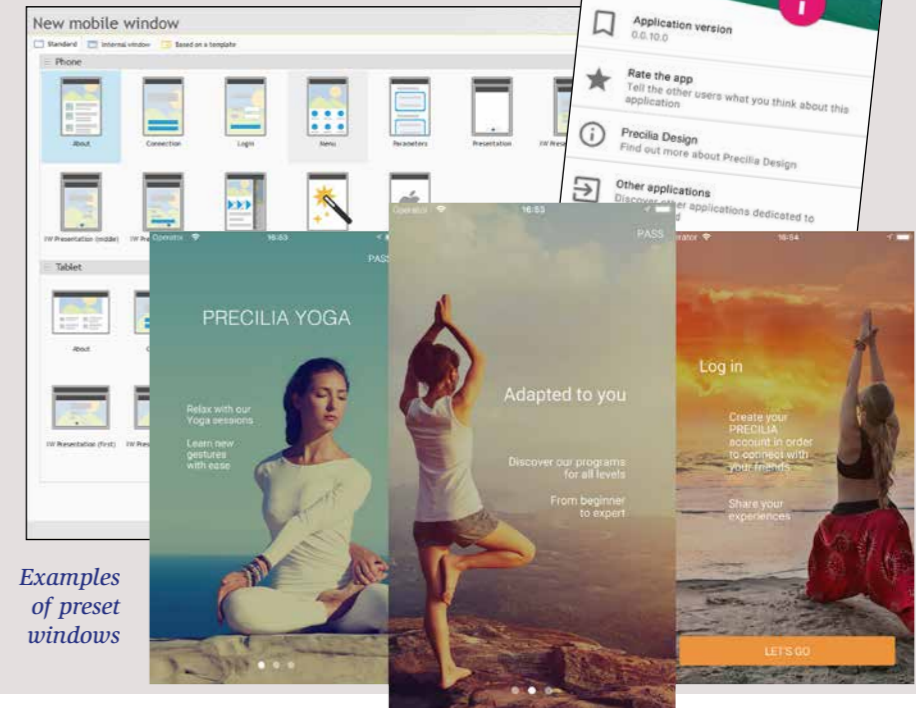
You can also create non-maximized and clipped windows.



Color picker Popup window

## PRESET WINDOWS

To create your windows even faster, WINDEV Mobile offers a set of preset windows: simply start with a window close to what you want to create.



Examples of preset windows

## RATING CONTROL

ANDROID, IOS

The Rating control lets you indicate a rating and/or write a review.

In addition to stars, various icons are available: hearts, smileys,...



## GESTURE & MULTI-TOUCH MANAGEMENT, 3D TOUCH...

ANDROID, IOS

Most mobile devices support touch gestures: applications are at your finger tip(s)!

The applications developed with WINDEV Mobile recognize touch movements on the screen: scroll, pinch zoom,...

In the code, a set of events allows you to manage processes: vertical or horizontal movement with one or more fingers in contact with the screen, small quick movement of one or

more fingers on the screen, moving two fingers apart or together on the screen.

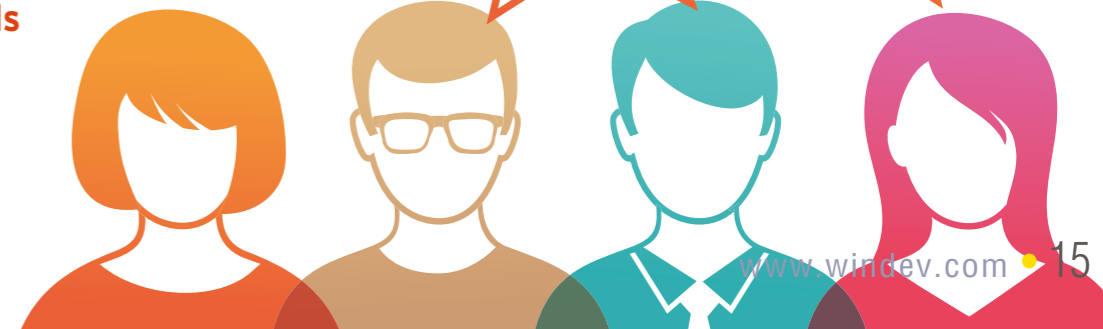
Going from one window to another is now possible with a finger gesture.

The long press on a button or on an image is also supported.

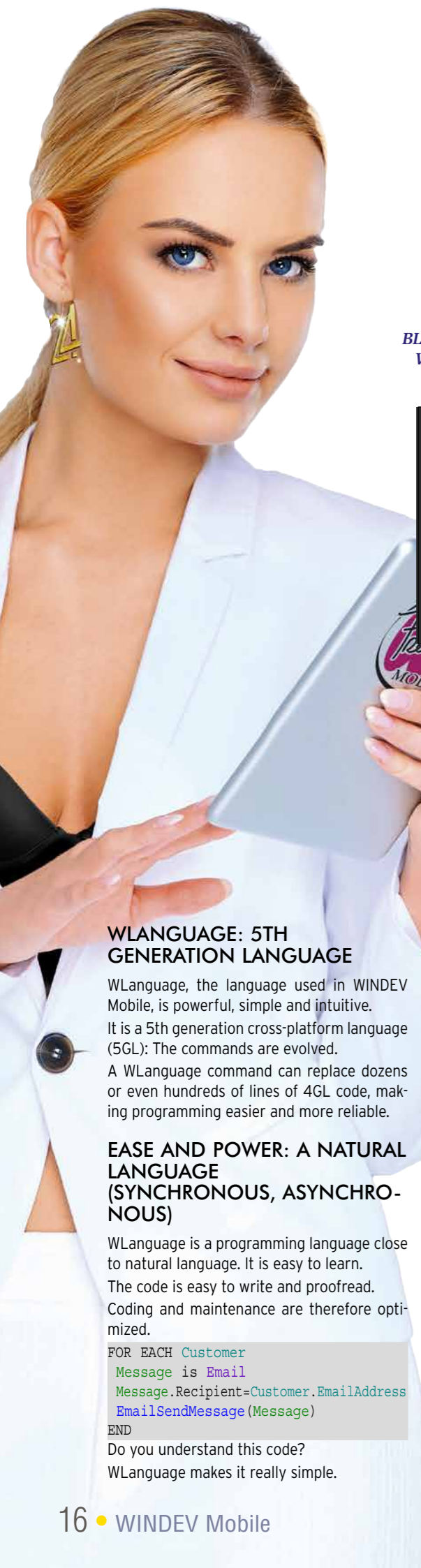
3D touch is supported.



WINDEV Mobile is compatible with all standards







# THE PROGRAMMING LANGUAGE

BLACK or WHITE?

```
// Retrieves the current position
CurrentPosition is geoPosition = GPSGetPosition()

// Browse the stores in the database
FOR EACH Store
    // Calculate the distance between the store and the current position
    StoreLocation is geoPosition
    StoreLocation..Latitude = Store.Latitude
    StoreLocation..Longitude = Store.Longitude

//If the distance is less than the configured distance
```

## VARIABLES AND TYPES

Declaring variables is easy and intuitive.

```
Message is Email
CustomerArray is array of Customers
```

WLanguage offers the all the types, including integer, boolean, currency, numeric, real number, character string...

## THE STRING TYPE: POWERFUL

WLanguage lets you manage text of different types such as ANSI, Unicode, UTF-8 or binary content thanks to the buffer string type.

Conversions are automatically performed based on the functions or properties used.

```
Msg is UNICODE string
Msg = "Salut! 你好! привет!"
```

## OOP

The use of Object oriented programming (OOP) is optional with WINDEV Mobile.

The classes and the syntax of WLanguage allow for modern and efficient object-oriented programming.

Base class methods can be redefined visually from the project explorer; virtual methods are managed automatically.

Management of the instances' memory is automated in most cases, when allocating as well as when freeing memory.

## CONSUME WEB SERVICES (SOAP & REST)

Handling web services is very easy in WLanguage.

The data handled by the web services appear

as simple structures and the operations appear as simple procedures. JSON is native.

## CROSS-PLATFORM

Code written in WLanguage is cross-platform: 32 or 64-bit, Android, iOS and UWP, Windows, Linux, Java, JavaScript, PHP ...: a major advantage.

## TARGET CODE

To deal with specific cases, you can write a different code for a given process according to the target platform.

The correct code will be automatically compiled according to the target. Thus, a single source code can contain code specific to each OS (e.g. stylus support).

## CODE COVERAGE

The WINDEV Mobile code editor indicates the percentage of lines of code tested: code coverage.

Lines of code that have never been executed are listed in the code editor.

## A VERY POWERFUL LANGUAGE

WLanguage is rich and powerful.

You can discover it via the "Express" version (free and without time limit) of WINDEV Mobile available for download at [WWW.WINDEV.COM](http://WWW.WINDEV.COM).

## WLANGUAGE: 5TH GENERATION LANGUAGE

WLanguage, the language used in WINDEV Mobile, is powerful, simple and intuitive.

It is a 5th generation cross-platform language (5GL): The commands are evolved.

A WLanguage command can replace dozens or even hundreds of lines of 4GL code, making programming easier and more reliable.

## EASE AND POWER: A NATURAL LANGUAGE (SYNCHRONOUS, ASYNCHRONOUS)

WLanguage is a programming language close to natural language. It is easy to learn.

The code is easy to write and proofread. Coding and maintenance are therefore optimized.

```
FOR EACH Customer
    Message is Email
    Message.Recipient=Customer.EmailAddress
    EmailSendMessage(Message)
END
```

Do you understand this code? WLanguage makes it really simple.



# WLANGUAGE FUNCTION FAMILIES

In addition to the standard statements (FOR, IF THEN ELSE, WHILE, etc.), WLanguage includes "families" of 5th generation functions.

No need to constantly reinvent the wheel.

Details of these functions, as well as their syntax, are available on [doc.windev.com](http://doc.windev.com).

These are the "Function families":

- Radio Buttons and Check Boxes
- Wi-Fi functions
- Drawing functions
- Charts: line, column, pie...
- HTTP, JSON, UUID functions...
- Emails
- SMS
- InApp functions
- Geolocation functions
- Mobile device management (vibration, led, volume, etc.)
- Sensor functions
- Mobile contact management
- Mobile calendar management
- iCalendar functions
- Notification functions
- Push management
- Management of multitouch
- General exception mechanism
- Database management functions (HFSQL and others)
  - SQL
  - Assignments
  - Read commands, modification
- Window management
- Window controls management
- Toolbar management
- Mathematical functions
- View table management
- Management of character strings
- Dates and times
- Calendar functions
- Scheduler functions
- Multiline Zone functions
- Internal Window functions

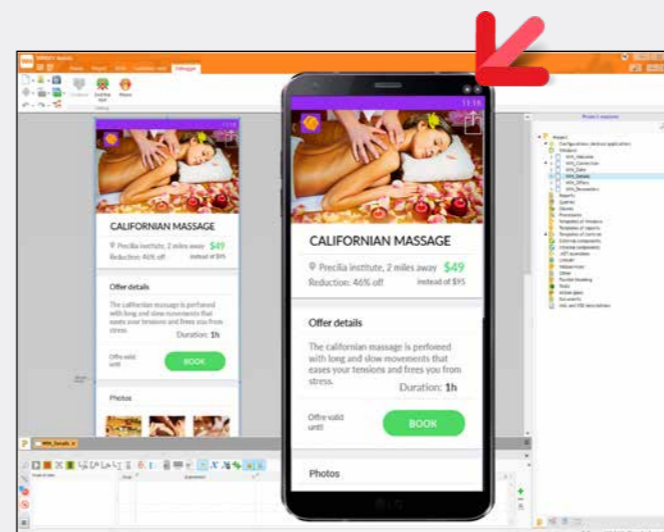
- Useful commands
- Custom error management
- Filter management (temporarily store part of the table on disk)
- Trigger management
- Replication
- Transactions
- Other functions
- Print functions
- Handling the List Box and Combo Box controls
- Binary values management functions
- Financial functions
- Managing the matrices
- Statistical functions
- Image animation
- Multimedia function (video, sound, ...)
- Memory area management functions
- Multilingual functions
- FTP & secure FTP functions
- NFC functions
- Beacon functions
- Bluetooth LE functions
- XML native functions
- OCR functions
- Clipboard
- Project management
- Socket functions (SSL, etc.)
- System functions
- Parallel Tasks, threads
- Background tasks
- Disks, files and directories
- File archiving and compressing (ZIP, 7Z ...)
- 3-tier
- Speech Synthesis functions
- Voice recognition functions
- Debugging functions
- Array functions
- Queue and Stack functions
- Map functions
- Facebook functions
- Etc...

Discover the complete list of WLanguage commands on [doc.windev.com](http://doc.windev.com)

## TEST AND DEBUG

### DEBUGGING ON THE PC USING THE SIMULATOR

Development is done directly on the PC. Application testing is performed directly on the PC, thanks to a very powerful "simulation" mode.



Here, a window being created, and its test in "simulation" mode on PC.

### DEBUGGING DIRECTLY ON IPHONE/IPAD AND ANDROID DEVICES

You can debug applications directly on the device. See pages 23 and 24.

### A POWERFUL DEBUGGER

The debugger offers advanced features: breakpoints, resume, on-the-fly code editing, view content variables... Bonus: the code editor supports dark mode.

```
Click on BTN_Position - Debug in progress
1 MyPosition is geoPosition
2 PositionMarker is Marker
3
4
5 // Retrieve the GPS position of the user
6 MyPosition = GPSGetPosition(gnTimeout,"Retrieving your position...")
7
8 // Display the position on the map with a marker
9 PositionMarker.Position = MyPosition
10 MapAddMarker(MAP_Position,PositionMarker)
11
12 // Display an itinerary toward the destination store
13 MapAddItinerary(MAP_Position,[MyPosition,gStorePosition], itin
14
15 // Center the map
16 MAP_Position..Zoom = zoomAdaptSize
17
18 // Display a message
19 ToastDisplay("Here is the itinerary to the selected store")
20
```

Code debugging in progress



# MOBILE-SPECIFIC PROGRAMMING

## WLANGUAGE: 90% LESS CODE

WINDEV Mobile uses a 5th generation language: WLanguage (see previous pages). All the usual features of a powerful programming language are available: variable declaration, assignment, loops, OOP, etc... Easy to learn and very powerful, WLanguage saves precious time for development teams.

Reminder: this chapter only presents the features specific to mobiles. All common programming features are available in WINDEV Mobile.

## ACCELEROMETER AND ORIENTATION SENSORS

Some devices include an accelerometer and orientation sensors and can be controlled by the movements of the end user. The `Sensor` functions allow you to support this type of interface.

## COMPASS

Some devices come with a built-in compass: WINDEV Mobile allows you to manage this compass in your applications.

## CUSTOMIZE THE ON-SCREEN KEYBOARD

You can customize one key of the virtual keyboard in your applications: @, .COM...

## WI-FI



Wi-Fi support is very complete in WINDEV Mobile. The `WiFi` functions offer all the features required to manage Wi-Fi.

## BLUETOOTH

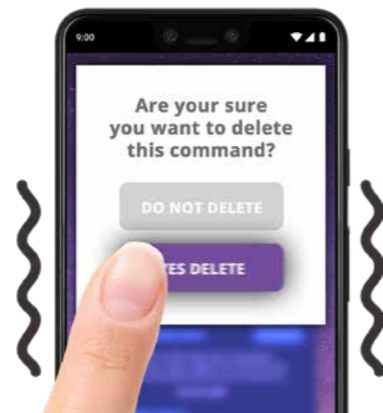


Bluetooth support with WINDEV Mobile is also very complete. The Bluetooth LE standard (for Low Energy), used mainly to manage connected devices (IoT), is supported. The `BT` functions offer many features, including:

- list of Bluetooth devices

a process when the application is sent in the background or reactivated by the user. This allows, for example, to refresh data automatically, or to request a password when the application is reactivated.

## MAKE THE PHONE VIBRATE!



Thanks to the `Vibration` functions, you can make the phone vibrate on demand.

## SPLASH SCREEN AT APPLICATION STARTUP

A splash screen can be automatically displayed when the application is started. Several parameters can be used to customize the splash screen.

## CONTACT LIST ACCESS

Reading, searching, creating, modifying and deleting contacts found in the phone is managed by WLanguage through the `Contact` family of functions.

Your applications can therefore share information with the contacts. For example, your application can automatically add a contact into the list of contacts.

## RFID

WLanguage allows for native RFID support.

## NFC

WLanguage allows for native NFC support (read/write on Android, read on iOS).

## MULTIMEDIA SUPPORT

In addition to the powerful Camera control,



## PUSH NOTIFICATION

A notification is a message that is displayed on the device and is used to notify the end user of a given event.

A push notification is sent from a remote application.

The application for sending notifications can be developed in WINDEV or WEBDEV. When sending the notification, you can specify an icon, a message, a sound to play, whether a led must be light up, or a vibration triggered. The notification can also be sent from a third-party software.

You can program the process to perform when the end user clicks the notification.



Push notification

some multimedia functions are available in WLanguage.

The application can, for example, add or get images from the photo album according to various criteria.

## SPEECH SYNTHESIS

The `SpeechSynthesis` family of WLanguage functions lets your devices speak! Simply pass a character string or a text file.

## SPEECH RECOGNITION

Phones are also good listeners! Simply talk to the function `SpeechRecognitionTrigger` and the text that is spoken out is transformed into a string of characters!

## FACIAL AND FINGERPRINT RECOGNITION

The WLanguage function `CheckUserIdentity` allows authenticating fingerprints.

## AUTOMATICALLY DIAL A PHONE NUMBER

The WLanguage function `tapiDialerCall` allows you to trigger a call to the specified number.

## SENDING AND READING SMSS

An app can open the SMS send window, which would already contain the text of the SMS and the recipient(s). The end user only has to validate the sending.

Applications can also view incoming SMS messages.

## FINDING OUT THE CONNECTION TYPE AND THE NETWORK STATUS

The `MobileNetworkStatus` WLanguage function enables you to find out the network connection type, and the signal reception quality.

It can be useful for an application to determine if it is connected to the Internet via WiFi, 3G, 4G, or 5G.

For example, if the signal is weak, certain data transfers can be avoided.

## MANAGEMENT OF NON-LATIN LANGUAGES

Non-Latin languages (Russian, Chinese, etc.) are supported.

## REST & SOAP WEB SERVICES

WINDEV Mobile offers integrated Webservice support. The call to Webservices is easy to implement.

The Webservice used is imported into the source project and it is recognized by the development environment: types declared by the Webservice, procedures to call,...

Development is simplified.

## GET AND POST

The `HttpRequest` function allows, among other things, to send "get" or "post" requests to an application server (WEBDEV or any

## IOT (INTERNET OF THINGS): THE BLUETOOTH OF CONNECTED OBJECTS (LOW ENERGY)

The Bluetooth LE standard (for Low Energy) is used to manage devices with low energy

consumption.

This is fundamental for managing IoT (Internet of Things).

The purpose of this standard is to allow the connected objects to operate for several months without changing batteries!

For this purpose, the `BTLE` family of functions is available.

## MQTT

The MQTT (MQ Telemetry Transport) protocol is supported.

## BEACON

The `Beacon` family of functions lets you manage beacons.



Polar - Cardiac frequency transmitter H7

other type of Web server), which is useful for exchanging data between applications.

ANDROID, IOS, UWP

## HTTP FORMS

An HTML form returns as a result, once validated by the user, an HTTP form which contains the data from the various controls in the HTML form.

ANDROID, IOS, UWP

## LOG IN TO YOUR APPLICATIONS VIA TWITTER, FACEBOOK, INSTAGRAM, APPLE ID...



This is an increasingly common way of logging in to applications: end users use their settings (email, password) of a social network (Facebook, Twitter, Google, Instagram, etc.) to log in to the third-party application (here: your application!).

WINDEV Mobile lets you easily implement this type of authentication in your applications (OAuth2 protocol).

ANDROID, IOS, UWP

## ICALNDAR

iCalendar is a standard to exchange calendar and scheduler data.

A text file (.ics extension) contains the appointment details.

WINDEV Mobile allows you to read and write data in an iCalendar file.

ANDROID, IOS

## REAL-TIME GEOLOCATION WITHOUT BATTERY CONSUMPTION

This geolocation mode automatically calls a procedure when the device is moved. This call is performed directly by the operating system, even if the app is closed.

For example, this procedure can register or send a position, detect the proximity of a given point: another user, store, charging station, gas station, bar, restaurant...

ANDROID, IOS, UWP



ANDROID, IOS, UWP

## XML

The advanced XML type is available.

Importing an XML file into the development environment automatically declares all the corresponding types needed to easily handle the XML file.

Working with XML file is easier than ever because tags can be handled in a readable format in the source code. For example, `Book[1].Author` accesses the content of the "Author" tag of the first book in the XML file.

ANDROID, IOS

## JSON

JSON is supported natively. The code editor provides input assistance.

ANDROID, IOS

## FTP FUNCTIONS

The FTP protocol is a file transfer protocol. WLanguage offers the FTP function family. This enables automatic data and document exchange through programming.

ANDROID, IOS, UWP

## THREAD AND PARALLEL TASKS

The processors of mobile devices are becoming more and more powerful, and include several cores. The Thread and ParallelTask family of functions are available.

ANDROID, IOS

## API: NATIVE CALLBACK TO WLANGUAGE

You can use APIs that call Callback procedures.

ANDROID, IOS

## RUN A PROCESS IN THE BACKGROUND WITHOUT CONSUMING POWER

Continuing to run a process when the application is in background is very useful on mobile: appointment reminder (display a notification), turnover calculation in real time, data retrieval...

Simply specify how often this process must be run.

Between the calls, the procedure consumes no battery and no CPU.

ANDROID, IOS, UWP

## RATING THE APP IN THE STORE

AppOpenForm allows you to ask the user to rate the application. This function opens the Store page requesting the ranking of the app.

ANDROID, IOS, UWP

## APPLICATION TELEMETRY

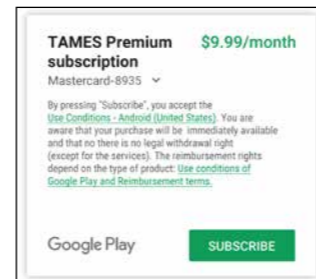
Telemetry allows you to know precisely how your applications are used: usage frequency, windows, controls and buttons used, device details, duration of actions, 10 most used features,...

This is particularly useful for mobile applications where designers cannot communicate with users.

WINDEV Mobile offers powerful telemetry features as standard.

ANDROID, IOS

## IN-APP PURCHASE AND SUBSCRIPTION



*InApp purchase from an application (here on Android)*

Inside an app it is sometime possible to buy options for the app, or to subscribe to features.

This purchase or subscription is also done via the store, and is called "In-App purchase".

WINDEV Mobile allows you to propose these paid options in the applications.

ANDROID, IOS

## READ BAR CODES AND QR CODES



QR Code, PDF147, UPC-E, Code39, Code93, Code128, Aztec, EAN 8, EAN 13 and DataMatrix bar codes can be decoded natively.

An application can get a bar code and decipher its content automatically.

ANDROID, IOS

## URI

URI functions are used to manage "external" files (installed) or files accessible from the phone.

You can program any process on the selected files.

ANDROID, IOS, UWP

## CREATE PDF REPORTS



It is easy to generate PDF files.

You can start print jobs in the code or via the report editor.

You can view PDF documents in the PDF Reader control, without leaving the application.

ANDROID, IOS

## BUNDLE/PACKAGE RESOURCE MANAGEMENT

There are functions to let you manage the resources embedded in the bundle more granularly (the bundle for iOS, package for Android).

The application can list the resources and extract some.

ANDROID, IOS

## HOURLASS

A spinning wheel appears in the system bar when an application transfers data over a wireless network: Wi-Fi, 4G, 5G... The HourglassNetwork WLanguage function can be used to show or hide this wheel.

ANDROID, IOS

## MANAGE CONNECTION LOSS AND RECOVERY

A mobile device can lose its connection, when entering a building for instance.

WINDEV Mobile offers a mechanism for managing connection loss and reconnection.

For example, the application can fall back to local data in case of a loss of connection, and start an instant synchronization when the connection is reestablished.

Simply specify the procedure to call if the connection is lost or reestablished.

ANDROID, IOS, UWP

## PREVENT THE DEVICE FROM GOING TO SLEEP

The SysStandby function lets you prevent a device from going to sleep.

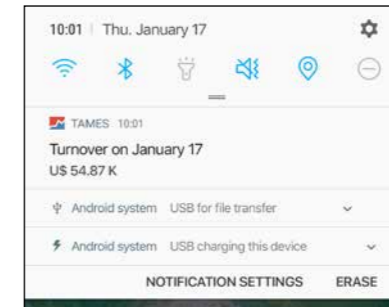
A parameter lets you authorize or not the device to go to sleep depending on whether it is plugged in or running on batteries.

Therefore an application can remain active and visible all the time or during the amount of time allowed.

Reminder: this section presents mobile-specific features only. All common programming features are available in WINDEV Mobile.

ANDROID, IOS

## NOTIFICATION



*Expanded notification*

Thanks to the Notification functions in WINDEV Mobile, it is easy to add and delete notifications.

An application running in the background can send a notification to the system.

ANDROID, IOS

## WRITING A NUMBER ON AN APPLICATION'S ICON



The SysIconBadge function lets you include a number on the app's icon.

This is useful for displaying a number of messages, for example.

ANDROID, IOS

## SENDING AND RECEIVING EMAILS

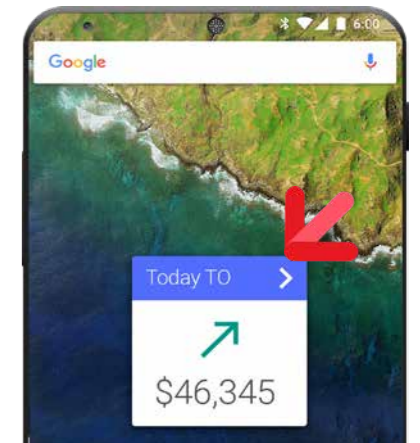
Functions for sending and receiving emails are available in WLanguage.

It is also possible to trigger the opening of the standard outgoing mail window with the contents already filled out (subject, title, attachment, etc.) by programming.

ANDROID, IOS

## CREATING WIDGETS

A widget is a window that can be pinned to a home screen. WINDEV Mobile allows you to create Widgets.



*Widget created with WINDEV Mobile*

ANDROID, IOS

## OCR: TAKE A PICTURE, RETRIEVE THE TEXT

Applications developed with WINDEV Mobile include Optical Character Recognition (OCR).

This type of recognition can be used on any file (PDF, JPEG, etc.) and also on photos taken with the phone (or tablet).

The user can take a picture of a contract and retrieve the text of the contract in the application!

The phone can also be used as a scanner for a Windows application or a website: it takes a picture of a document and sends the text to a Windows application or a website.





# ADDITIONAL FEATURES FOR ANDROID

ANDROID, IOS, UWP

WINDEV MOBILE allows you to create native applications for iPhone, iPad and iPod Touch, Android, UWP, etc...

In addition to the controls and features presented before, WINDEV Mobile offers specific features for **Android**.

Therefore the features described below come in addition to the common features.

To develop a cross-platform application and use these specific features, simply use the "Conditional target code" (see p. 16).

## "MATERIAL DESIGN" STYLE

The Material Design style was made popular by Google.

By default, applications created by WINDEV Mobile use Material Design elements: toolbar style and animations, style of "info", "Error", "Dialog" and "Combo" windows, Check Box and Slider controls...

The toolbar can be 56 or 48 pixels high.

## LAUNCH AN APPLICATION WHEN THE DEVICE STARTS

When generating the application, you can specify that the application must automatically be launched when the device starts.

This is useful for a demo device, for example.

## INDUSTRIAL DEVICES



WINDEV Mobile allows you to create Android applications for industrial use cases.

## SECURITY: OBFUSCATION OF GENERATED CODE

The code generated for the Android applications can be obfuscated (made illegible) in order to protect it against decompilation and reverse-engineering operations.

The strings are also encrypted: identifiers...

## CALL JAVA LIBRARIES (MAVEN & JCENTER SUPPORT)

It is possible to natively call Java libraries provided by third parties for example for managing a hardware device,...

In the code editor, you can also write Java code instead of WLanguage (useful for troubleshooting!).

## SAMSUNG DEX

Applications developed with WINDEV Mobile are compatible with DeX, a desktop-monitor-like display feature.

## DISABLE SCREENSHOTS

Applications developed with WINDEV Mobile can prevent the user from taking screenshots. This is useful in sensitive applications.

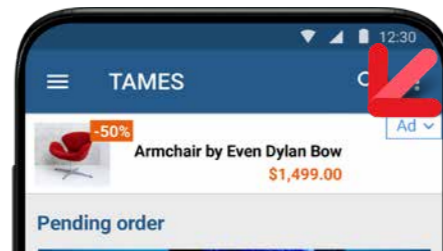
## MOBILE CONTROL CENTER

The Android Control Center allows you to easily monitor Android devices during the development phase: easily access directories, view logs and traces, ...

## GENERATE REVENUES: AD CONTROL

The "Ad" control is available for Android. It uses the Google "AdMob" protocol.

Your applications can display ads served by Google and generate revenues.



Display ads in your mobile apps and generate revenues!



## CONTROL AN ANDROID (WEAR OS BY GOOGLE) OR TIZEN WATCH

Easily create notifications for smart watches running Android (Wear OS by Google) or Tizen.

Notifications can launch actions.

## ANDROID DEPLOYMENT: EASY



Your applications can be easily deployed:

- by copying the application directly from the PC to the device,
- via Play Store,
- by using an MDM system (see page 30).

Applications deployed on Play Store can be free or paid.

If the application is paid, you receive revenue for each download of your application.

To be deployed, an application must be signed.

WINDEV Mobile offers signature functionalities.

The App Bundle distribution format is supported, as well as the generation of APKs per target.

## DEPLOYMENT FOR KIOSK DEVICES: STAY WITHIN THE APPLICATION!

WINDEV Mobile allows you to develop applications in "kiosk" mode: the user will not be able to exit the application.

This mode is used on tablets given to visitors in museums, or to present the menu in a restaurant, for example.

This mode is also useful for information kiosks.

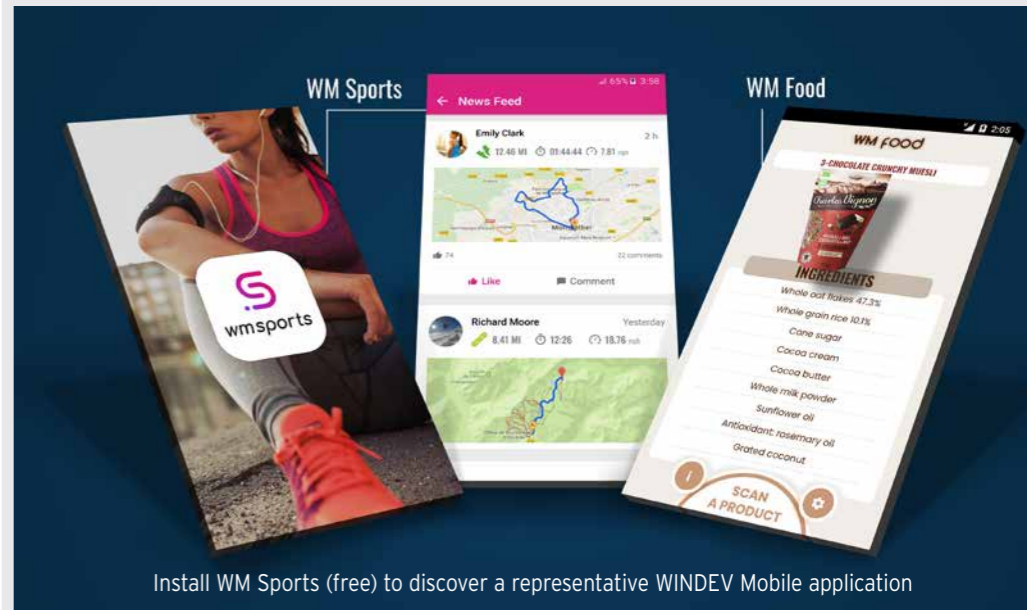
## ANDROID EXAMPLES

A large number of examples are provided with Android.

Among these examples, you will find:

- **WM Sports:** sports tracking: distance calculation, average speed, display on a map, etc. Available on Google Play.
- **FTP Client:** FTP client for Android device. Available on Google Play.
- **Explorer:** file explorer for Android
- **Contact management:** custom contact management example
- **Order management:** order taking example (customer and product management, etc.)
- **Attendance:** Attendance manager (seminar, ...)
- **GPS:** example on GPS features use (longitude, latitude, altitude, speed and direction)
- **Geolocation:** management of proximity detection
- **RSS reader:** RSS stream reader with management of images and favorites
- **Password:** password "vault" (pin codes, websites, etc.). Available on Google Play.
- **Notes (reminder):** graphic note taking
- **Speech synthesis:** example of the use of speech synthesis features

## AVAILABLE EXAMPLES



Install WM Sports (free) to discover a representative WINDEV Mobile application

- **System:** example for using system features specific to Android (toast, notifications, Wi-Fi, ...)
- **Game:** example of gaming application, usually intended for distribution on the Play Store. Available on Google Play.
- **Inventory:** inventory with backup in a database
- **Expense accounts:** fill in and follow-up expense accounts. Available on Google Play.
- **WM Food:** Displays the composition of a food product by scanning its barcode (base Openfoodfacts). Available on Google Play.
- **Poll:** manage a poll on a tablet.
- **Shopping:** Shopping list management.

- Available on Google Play.
- **Quiz:** Quiz management.
- **ToDo List:** management of a task list
- ...

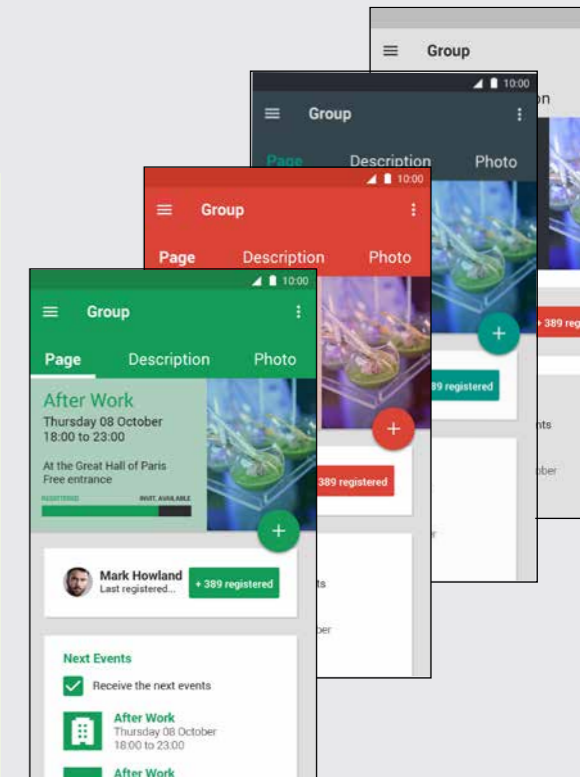
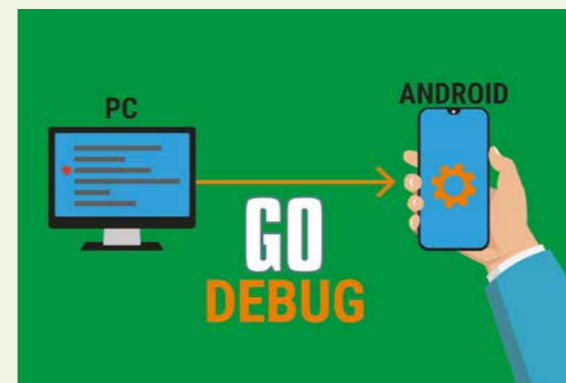
## DEBUG APPLICATIONS DIRECTLY ON THE PHONE, TABLET OR DEVICE

Debugging an application on the device is especially useful for tracing a functionality that cannot be properly emulated on the PC: GPS location, embedded printer, scanner, access to phone contacts and calendar, photo and video recording, gestures (delete rows by swiping, etc.), ...

WINDEV Mobile allows you to debug an under-development Android application directly on the device.

Simply set the breakpoints in the code, beforehand or during debugging.

When the execution reaches the breakpoint, the application goes into freeze mode, and the code editor displays the corresponding code. You can visualize the content of the variables, the call stack, ... then continue the execution: step by step, ...



## ADDITIONAL FEATURES FOR IOS

WINDEV MOBILE allows you to create native applications for iOS, Android, UWP, etc.

In addition to the controls and features presented before, WINDEV Mobile offers specific features for **IOS**.

The following features come in addition to the common features.

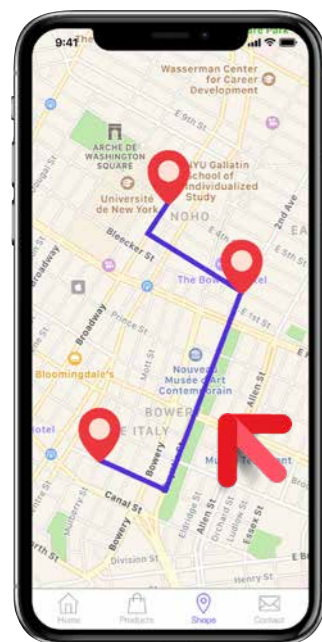
### IOS 14 AND IPADOS SUPPORT

WINDEV Mobile supports iOS 14. The features of the latest iPhones are managed. iPadOS is also supported.

### APPLE MAP CONTROL

The Map control allows to display a map in formats supported by the iPhone: Apple Maps.

The map can be used in your applications, markers can be set, the display mode (map or satellite) can be changed, etc., all by programming...



To develop a cross-platform application and use these specific features, simply use the "Conditional target code" (see p. 16).

You can also copy HFSQL data files this way.

### COMPILATION OF APPLICATIONS

Applications are compiled with WINDEV Mobile. They must be signed then. To do so, use your "ios developer" certificate obtained from Apple to sign your application. This operation is performed on a Mac.

### SWIFT IN YOUR WINDEV MOBILE APPLICATIONS

You can call or include Objective-C and Swift code natively in your applications. You can also directly enter Swift code instead of WLanguage code (useful for troubleshooting!).

### APPLE WATCH



WINDEV Mobile allows you to create native applications for the Apple Watch. These appli-

cations can communicate with apps on iPhones or iPads.

More than 400 WLanguage functions are already available in this version.

### DLNA

DLNA means Digital Living Network Alliance, which is a collaborative trade organization that is responsible for defining interoperability guidelines to enable sharing of digital media between multimedia devices. DLNA is based on Ethernet and Wi-Fi. WINDEV Mobile supports DLNA.

### ARTIFICIAL INTELLIGENCE (AI): MACHINE LEARNING ON IPHONE AND IPAD

The latest iPhone models are equipped with a processor that has features dedicated to neural networks, capable of performing 5 billion operations per second!

Apple provides an SDK (CoreML) that makes it possible to take advantage of these features.

WINDEV Mobile allows you to interface with this SDK, and thus implement AI features in your applications.

### 3D FACIAL RECOGNITION IN YOUR APPLICATIONS



Certain iPhone models have a 3D facial recognition scanner.

The applications written with WINDEV Mobile can use this mechanism to verify the user's identity using this device.

### TEST AND DEBUG APPLICATION UNDER DEVELOPMENT DIRECTLY ON IPHONE, WITHOUT MAC

When developing an application for iOS (iPhone or iPad), WINDEV Mobile allows you to test the application being developed (launch a GO) without having to recompile it on Mac, but directly on the iPhone or iPad.

For debugging, the application on the phone is controlled by the debugger.

You can then access the debugger: breakpoints, step by step, content of variables, stacks...



### SHARING FILES VIA ITUNES



An iOS application can be authorized to share files with a PC or a Mac.

End users can work with their data on the device of their choice.

### ALL IOS DEVICES SUPPORTED

WINDEV Mobile allows you to develop applications for all iOS devices: iPhone, iPad and iPad Mini, iPod Touch, ...

### STYLUS SUPPORT

Some Apple tablets accept the use of the Apple stylus.

An application developed with WINDEV Mobile can retrieve a significant amount of information about the use of the stylus:

- pressure
- tilt of stylus
- angle in relation to the tablet axis.

This information is useful, for example, for drawing applications.

### DEVELOP FOR MAC: CATALYST

WINDEV Mobile allows you to create applications for Mac.



### "AD HOC" DEPLOYMENT

These are Catalyst applications, which offer a runtime mode similar to that of tablets (iPad).

### IOS DEPLOYMENT: EASY

The Ad Hoc deployment mode allows you to deploy an application on up to 100 devices of a given type (limit set by Apple).

The setup is performed manually from each device.

The application does not need to go through Apple's validation process, and is not publicly available.

### DEPLOYMENT ON THE APPSTORE

You can deploy apps on the App Store, of course.

Any application deployed on the AppStore must be validated and accepted by Apple beforehand.

### DEPLOYMENT ON MDM

Deployment on the WINDEV Mobile MDM is easy (see page 30).

However, an Organization deployment license from Apple

is required.

For deployment methods, terms are solely dependent on Apple and are subject to change. You may need to have a license or a subscription with Apple, or to have special hardware from Apple. Please visit the Apple's web site to check the accuracy of the information and the specific conditions at the time you're reading this information.

### DEPLOYMENT OF APPLICATIONS

WINDEV Mobile allows you to deploy your applications according to the methods proposed by Apple:

- App Store
- Apple Business Manager & Apple School Manager
- Ad Hoc distribution

You can also distribute your professional applications via an MDM system (see page 30).

Note: An Apple Developer membership is required regardless of the distribution method.



The distribution of an application through the App Store has to be validated by Apple (your application must undergo and pass a validation process).

Applications distributed through the App Store are visible and accessible to the public. "Ad Hoc" and "MDM" distributions (see below) allow you to distribute applications without validation from Apple, and without having to expose them to the general public. This prevents third parties from loading your professional applications.

You control the distribution of your applications and you don't have to pay any commissions.

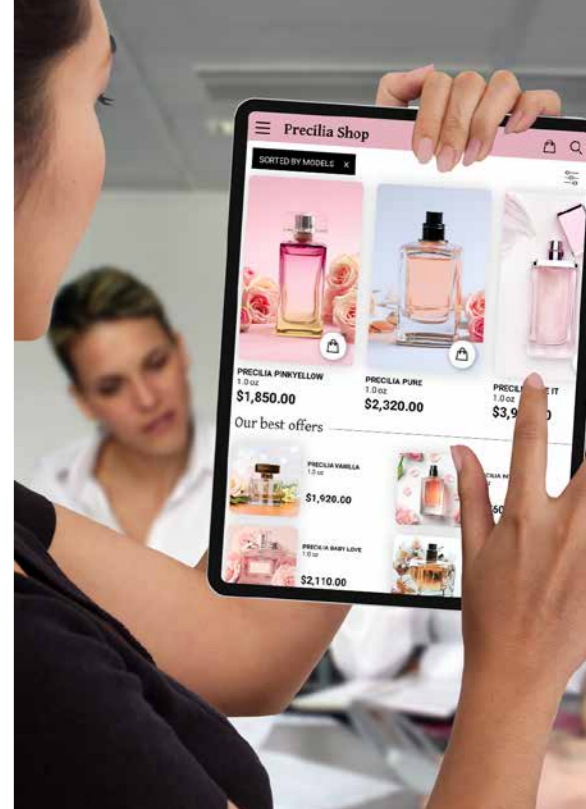
## AVAILABLE EXAMPLES

### IOS EXAMPLES

A large number of examples and their source code are provided for iOS.

Among these examples, you will find:

- WM Sports
- Food
- Geolocation
- Poll management
- ToDo List
- Shopping (bar code shopping list)
- Chrono,
- Click Chart,
- CRM,
- Loan,
- Regular expressions,
- Financial functions,
- Contact management,
- Order management,
- RSS reader,
- Password,
- Notes,
- Expense accounts,
- Poker,
- Stocks,
- System,
- Tic Tac Toe,
- FTPClient
- Quiz
- Etc...





## ADDITIONAL FEATURES FOR WINDOWS UWP

WINDEV MOBILE allows you to create native applications for iPhone and iPad, Android, UWP, etc.

**In addition to** the controls and features presented before, WINDEV Mobile offers specific features for **UWP**.

The following features come in addition to the common features.

### NATIVE UWP APPS

WINDEV Mobile generates native applications for UWP (UWP stands for Universal Windows Platform).

### TILE MANAGEMENT



A tile is composed of an icon, a background color and optional content.

You can customize the background color and the icon.

The **Tile** family of functions lets you modify the format of the tile (text, image, text & image, etc.) and its content which can be dynamic.

You can also display a counter in the corner of the tile.

### BING MAP CONTROL

The Map control in UWP allows you to display "Bing" maps.

You can add routes, markers,...

### PDF REPORTS

The report editor allows you to create PDF reports easily.

### ANCHORS

Anchors and layouts let your applications adapt to the different screen sizes.

### DEBUGGING

The debugger is available in "simulator" mode in the WINDEV Mobile editor.

### API: NATIVE CALL OF .NET ASSEMBLIES

You can call .Net assemblies (universal Windows class libraries) and APIs (Universal Windows Component) from your WLanguage code.

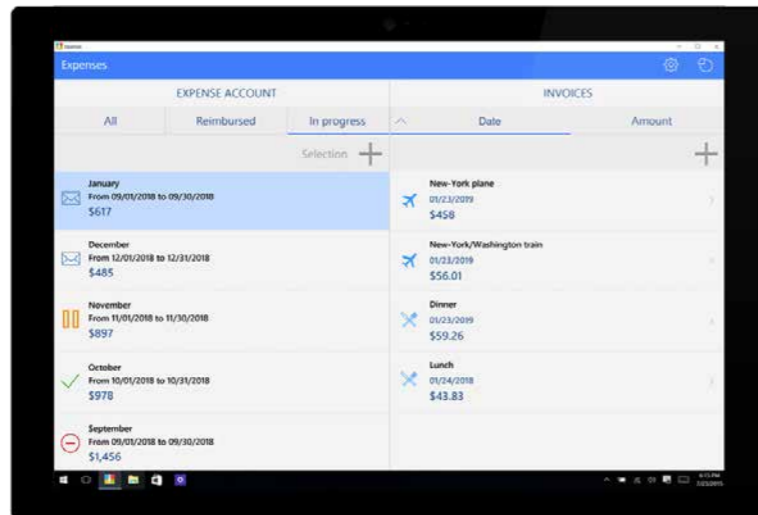
The assembly classes can be manipulated natively from the environment (call the methods of these classes).

You can implement "delegate" methods that will be called back.

### MICROSOFT STORE

UWP applications developed with WINDEV Mobile can be distributed either by copying them directly on the device, or via the Microsoft Store.

*For deployment on the store, the conditions depend on Microsoft and may change at any time. You may need a Microsoft license or subscription.*

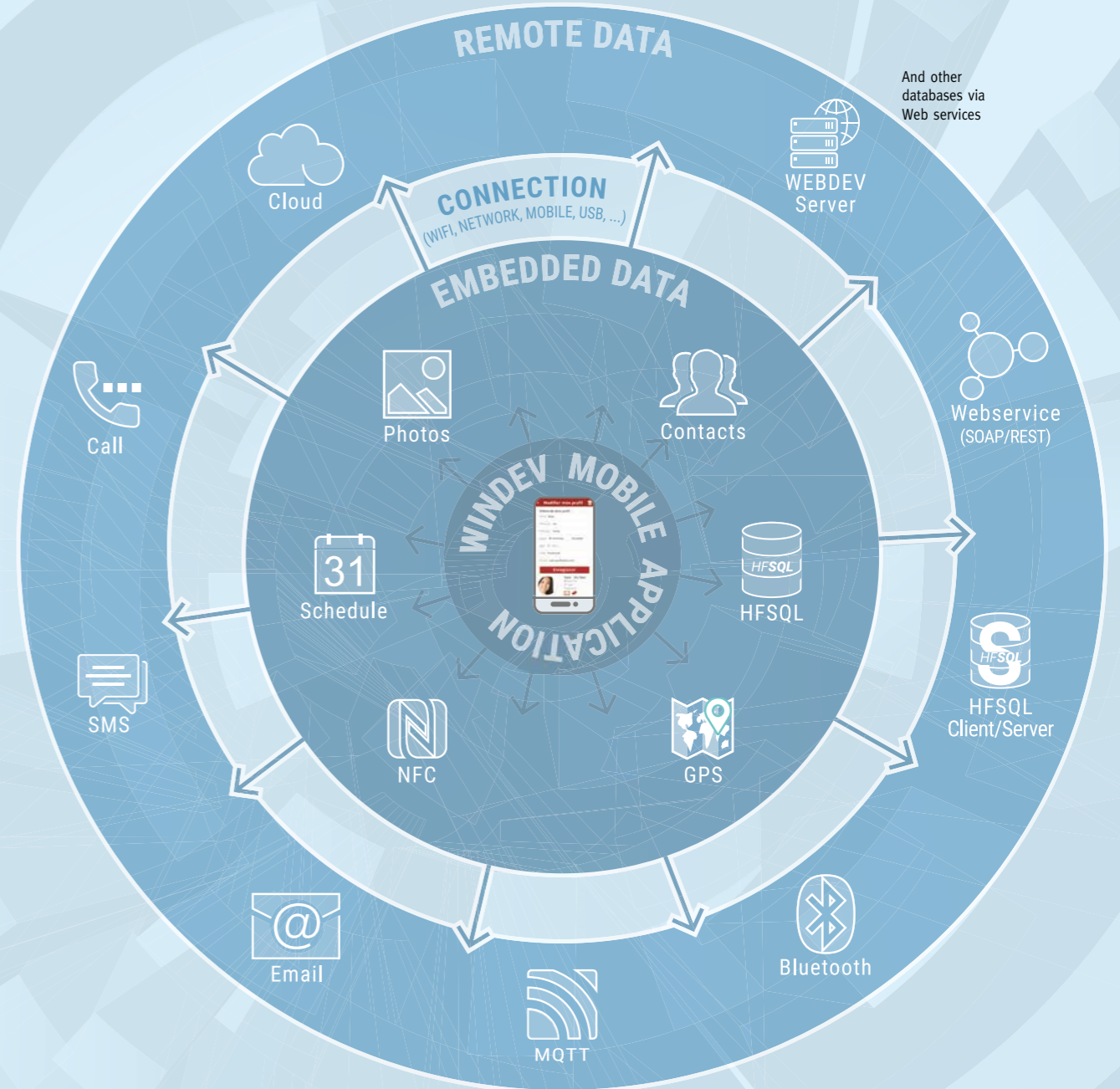


### UWP EXAMPLES

Among the examples delivered in UWP you will find:

- Password management
- Note management
- Chrono
- Order management
- Quiz

## YOUR I.S. AND MOBILE DEVICES



## WINDOWS CE

### WINDOWS CE TO ANDROID

Microsoft has announced the end of Windows CE support.

WINDEV Mobile makes it remarkably easy to migrate your Windows CE industrial applications to Android: keep your windows and your code!



### TYPES OF CONNECTION TO THE IS DATABASES.

	HFSQL Classic	HFSQL C/S	SQL Server	Oracle	AS/400	SQLite	Text file	Binary file	XML	Any database	Cloud
Android	•	•/•	•	•	•	•	•/•	•/•	•/•	•	•/•
iOS	•	•/•	•	•	•	•	•/•	•/•	•/•	•	•/•
UWP	•	•/•	•	•	•	•	•/•	•/•	•/•	•	•/•

- Access by Web server
- Native access

With WINDEV Mobile, you access your mobile device's resources natively and easily. Your applications are fully integrated into your existing code (I.S., database, web services, email, etc.). Thanks to WINDEV Mobile, your mobile device becomes an intelligent peripheral of your I.S.



# DATABASES: FOR ALL SYSTEMS

**HFSQL: THE RELIABLE, QUICK,  
EASY & FREE DBMS**

ANDROID, IOS, UWP

# HFSQL®

WINDEV Mobile 19 comes with the powerful HFSQL database. Distribution of HFSQL is free.

ANDROID, IOS, UWP

## HFSQL CLASSIC: EMBEDDED

The HFSQL database can be installed directly on the device. Your applications benefit from HFSQL's power. HFSQL is compatible with Android, iOS, UWP, as well as Windows, Mac and Linux.

ANDROID, IOS, UWP

## ACCESS TO HFSQL CLIENT/SERVER

WINDEV Mobile applications directly access data stored in Client/Server HFSQL databases installed on a Windows or Linux server, in 64 or 32-bit mode, via Wi-Fi, network, Internet, 3G, 4G, 5G...

This means that an application on a mobile acts in real time on I.S. data. Each device can easily access the company's data.

ANDROID, IOS, UWP

## PROGRAMMING

Database programming is very easy: it is done either via SQL queries, or via high level WLanguage functions.

## ACCESS TO A THIRD-PARTY DATABASE

ANDROID, IOS, UWP

Accessing a third-party database (Oracle, SQL Server, ..) from a mobile is done via the **SQLExec** family of functions.

Simply install a (provided) web service that accesses the third-party database.

ANDROID, IOS, UWP

## DATA STRUCTURE DESCRIPTION

The description of the database structures is done via the data model editor that comes with the development environment.

ANDROID, IOS, UWP

## MANAGEMENT

Database management is easy. All necessary tools are provided: reindexing, automatic data modification,... The HFSQL Control Center centralizes the management for the Client/Server part.

## SECURITY: ENCRYPTION

ANDROID, IOS, UWP

HFSQL lets you encrypt data and indexes. This is an important security feature for mobile devices, which can easily be taken away from their owners.

The encryption key can be found in a table, in a program, entered by the user, or deduced from various elements.

ANDROID, IOS

## RESUME CONNECTION

Reconnection after an unexpected interruption (Wi-Fi, 3G, 4G, etc.) is automatic.

All the database contexts are preserved. For example if the application is positioned on the customer "SMITH" and the network

goes down, when the network comes back up, the application will still be pointing to the customer "SMITH" and all the variables in the program will be correctly assigned. It is an automatic security feature for your applications.

ANDROID, IOS, UWP

## COMPLETE BINARY COMPATIBILITY FOR ANDROID, IOS, WINDOWS, LINUX...

HFSQL Classic, HFSQL Client/Server and HFSQL Mobile are fully compatible: data and indexes are stored in a binary identical format.

For example, a database can be directly copied from an iPhone to an Android phone or even to an HFSQL server on Windows! No conversion required.

Tables (data files) and indices can easily be shared or exchanged with the back office, for example.

ANDROID, IOS, UWP

## MOBILE REPLICATION

Universal replication between a mobile phone and HFSQL Client/Server or third-party databases (Oracle, SQL Server, etc.) is available.

This feature allows mobile devices to embed, use and update data, without a permanent connection.

For instance, sales people are in the field, using their tablet to present products, take orders directly at the client's.

Since it is not certain that a 3G, 4G, 5G connection, or Wi-Fi access point will be available at the very back of a building, the application uses the embedded database on the tablet.

Once the sales person is done, back in their car, they can start a replication with the enterprise database.

# REAL TIME / REPLICATION



## SQLITE: NATIVE CONNECTOR

ANDROID

Native access to SQLite lets you natively access the data files found on Android devices via the usual WLanguage commands (**FileToScreen**, ...).

WINDEV and WEBDEV also feature a Native SQLite Connector, which allows easy data synchronization.

## HOSTING YOUR DATA IN THE CLOUD

ANDROID, IOS, UWP



HFSQL databases can be hosted in the cloud. PCSCloud.net offers solutions that are easy to implement, either on a private server or on a shared server (HFSQLDrive.net).

This way the data is always accessible, without having to worry about the software or hardware infrastructure.

## HFSQL MOBILE CAPACITY

Rows per table	300 millions
Table size	16 TB
Row size	16 TB
Column size	65 535 bytes
Columns per table	65 535
Keys per table	65 535
Key size	65 535 bytes

## FEATURES

128-bit encryption
Referential integrity
Replication
Import Export
Transactions
Embedded
Compress/Decompress memos (Blobs) on the fly
TECHNOLOGIES
Automatic maintenance
Concurrent access management with HFSQL Client/Server
No management
Resume automatically after incident
Automatic deployment



**Imagine**, 1 Terabyte (1,000 Gigabytes) on an SD card. You can now easily embed databases (encrypted if necessary) with several hundred million rows on your mobile devices.



# MDM: PRIVATE STORE FOR PROFESSIONAL APPLICATIONS



## MDM SYSTEM AS STANDARD: PRIVATE STORE FOR PROFESSIONAL APPLICATIONS

ANDROID, IOS

To distribute your applications, there are 2 possibilities:

- use a public store such as App Store or Google Play (see pages 22, 25, 26, 32)
- distribute your applications by yourself.

The distribution of professional applications via a public store raises a number of concerns.

It is possible to distribute applications directly (by copying the app to the

mobile device) with WINDEV Mobile. However, this method is not feasible on a large scale because everything has to be done manually: copy to each device, updates, authorizations....

WINDEV Mobile offers an ideal solution for distributing your professional applications: WINDEV Mobile includes a ready-to-use Mobile Device Management system, which is equivalent to having a private app store.

ANDROID, IOS

## MDM FOR WINDEV MOBILE: EASY

It is very easy to deploy your applications:

1. Enable the MDM option in the project
2. Compile the applications
3. Upload the applications to the MDM server
4. Define the authorized users
5. Share the URL or QRCode (automatically generated) with the users
6. Users will download the app, log in and start using the app.
7. Then, simply upload updates to the MDM server. Users will be notified, and can accept and automatically download the update.

## AUTHENTICATION

ANDROID, IOS

You can fully manage usernames and passwords:

- create an account
- validate account creation by email
- manage forgotten passwords
- change password
- delete or temporarily block an account
- ...

End users can receive their login credentials, or be authorized to create their account.

You can restrict the account creation process only to certain contacts: in that

case, the administrator must specify the users' email addresses or domain names.

Users authenticate via the User Groupware, which allows you to set permissions.

ANDROID, IOS

## APPLICATION UPDATES

You can fully manage your application updates:

- download over Wi-Fi only,
- minimum required version,
- notification on the device or message in the application,
- ...

## MDM IN PCSCLLOUD

ANDROID, IOS

Pcscloud.net offers a special bundle to use an MDM server without having to worry about infrastructure and administration: you only define usage levels.





# DISTRIBUTION VIA PUBLIC STORES



## DEPLOYMENT BY DIRECT SETUP

ANDROID, IOS, UWP

The internal applications of a company can be installed directly on the devices. WINDEV Mobile makes this process very easy. This solution is adapted to small fleets of devices or specific requirements.

## DEPLOY ON YOUR PRIVATE STORE (MDM)

ANDROID, IOS, UWP

WINDEV Mobile includes a private store that you manage directly (see previous pages).

## DEPLOYMENT VIA PUBLIC STORES

ANDROID, IOS, UWP

Applications developed with WINDEV Mobile can be easily deployed on Google Play, App Store and Microsoft Store, for free or paid distribution.

Each operating system (iPhone, Android, Windows) has its own publishing policy.

## PACKAGE OR BUNDLE CREATION

ANDROID, IOS, UWP

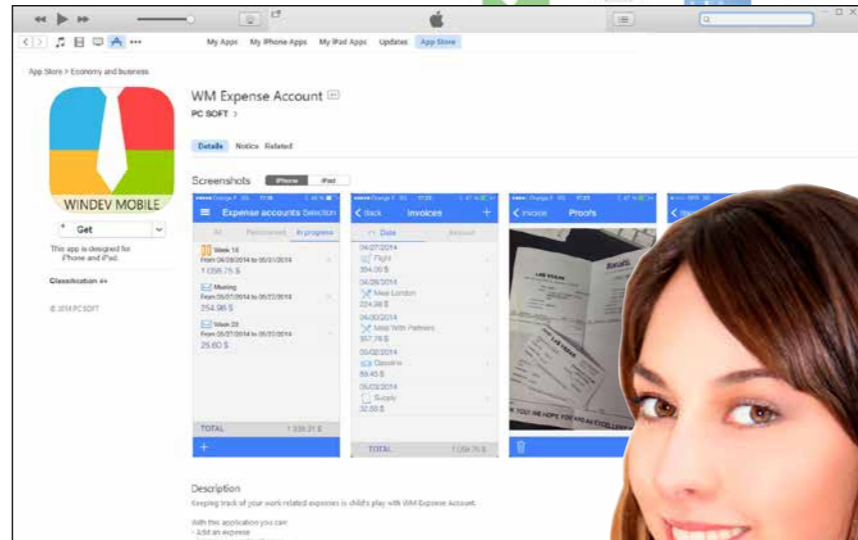
WINDEV Mobile guides you through the creation of setup files, called "Package" (Android/Windows) or "Bundle" (Apple).

It is possible to include HFSQL data files, images, documents and more directly in the package (or bundle),... WLanguage functions allow the application to list resources, and extract them.

## EASY DEPLOYMENT OF DATA FILES (TABLES)

ANDROID, IOS, UWP

If necessary, an automatic package extraction mechanism allows you to automatically install databases in the application setup location on the mobile phone.



2 popular stores:  
APP Store for iOS, and Play Store for Android



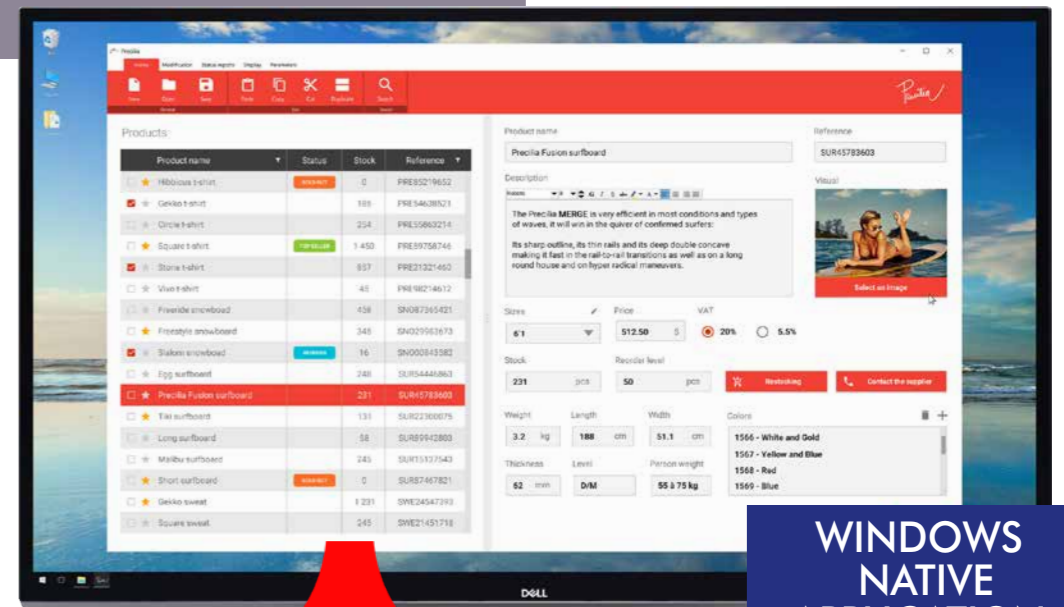
windev.com presents hundreds of apps created with WINDEV Mobile, and distributed on App Store and Google Play.

# NATIVE COMPATIBILITY WINDEV / WINDEV Mobile



## EXISTING WINDEV ELEMENTS? MOVE THEM OVER TO MOBILE IN A FEW HOURS!

WINDEV applications can be adapted to mobile platforms very quickly: resize windows to adapt them to mobile screens, enlarge buttons to make them touch-friendly, remove the processes that are no longer necessary on mobile devices, adapt the code (a wizard analyses your existing WINDEV code and indicates changes to be made), and you get a superb mobile application. Project portability allows you to have high-performance mobile applications in record time.



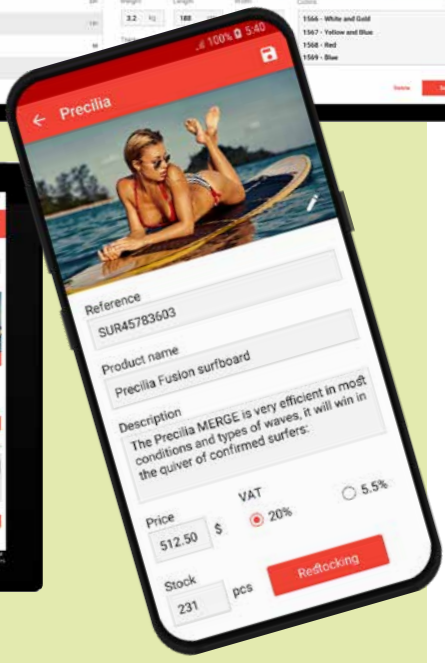
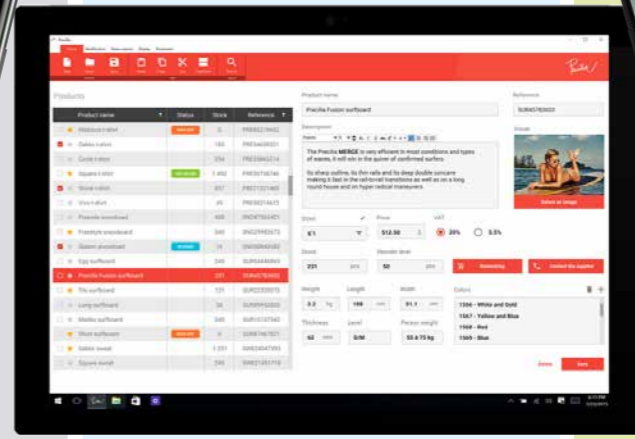
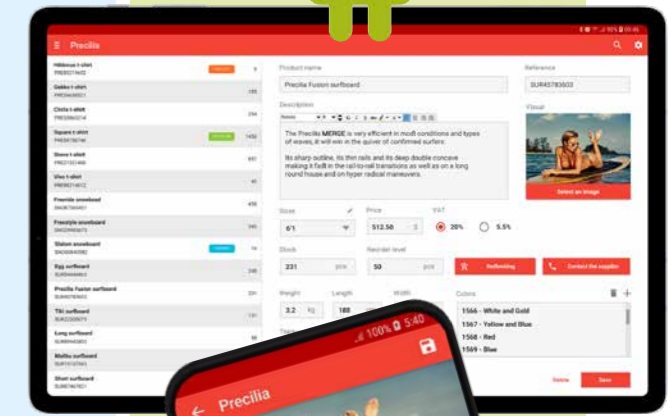
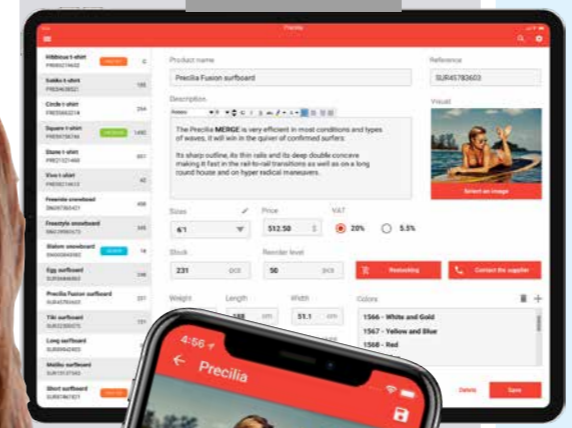
RECOMPILE IN WINDEV MOBILE

WINDOWS NATIVE APPLICATION

NATIVE APP iOS

NATIVE APP Android

NATIVE APP Windows



NATIVE, POWERFUL, AND BATTERY-EFFICIENT APPLICATIONS

With WINDEV, your projects are cross-platform: the code of course, but also windows, reports, queries, databases, analyses...



## QUESTIONS ANSWERS

**The same copy of WINDEV Mobile lets you create applications for iPhone and iPad, Android, UWP?**

Yes. And your code and windows are the same.

**Do I need to own WINDEV?**

No, WINDEV Mobile is a stand-alone software. If you have an existing WINDEV copy; you can switch your Windows or Linux applications directly to iOS, Android or UWP applications.

**What is the main advantage of WINDEV Mobile?**

Being able to easily develop a mobile application is a phenomenal advantage! The portability of the code, windows, classes, reports, data, etc. is another major asset.

**Do I need to pay royalties on applications developed using WINDEV Mobile?**

No, you can freely distribute your applications developed using WINDEV Mobile. Deploy without constraints!

**Can I run the test of the application currently developed on the development PC?**

Yes. All the development is done on a regular PC, and the application can be tested at any time using the simulator or a given device.

**Is WINDEV Mobile Technical Support free ?**

PC SOFT is confident about the ease of development provided by its software, and therefore offers Free Technical Support on WINDEV Mobile. Make fifteen inquiries (by phone or Internet) at no cost\*.

**Is there a WINDEV Mobile community?**

Yes, you can ask questions and benefit from the experience of the developer community on a professional forum.

**How long does the training take?**

If you know WINDEV, you will need only one day.

If you are not familiar with WINDEV, you will need one week.

Any other questions? Contact us, we are at your service!



### ENVIRONMENTAL POLICIES

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. Also, we favor pulp coming mainly from recycled wood (from furniture mills for instance) and from controlled forest clearing.

## EXAMPLES OF APPLICATIONS

Autonomous **mobile** application: order taking, delivery, meter reading, customer service, ...

Custom appointment management, link to the company's IS

**Quotation management**, real time invoicing on site (send invoice by email)

Bank account management, stock orders, portfolio management

Application with replication (physical, via Bluetooth, Wi-Fi, 4G or 5G, Internet or via the **Cloud**)

Wireless local area network application: mobile communication with the enterprise's network in real time

Application with secure access to your enterprise's data

Remote **real-time** application, via 4G or 5G

Real-time car inventory for auto dealerships

Crop tracking, **GPS marking** of the vine stock to monitor

"Live" creation of pages on a real estate property with automated photos

**Industrial machinery** control

**Geolocation** application, route optimization

Real-time dashboard for decision makers

Atmospheric monitoring (temperature, humidity, gas, etc.) with data transmission by LoRa or Sigfox

Opening hotel room doors by NFC

Restaurant menu on tablet

Subscription management and app for reading magazines on tablet

Display TV program suggestions based on user's profile

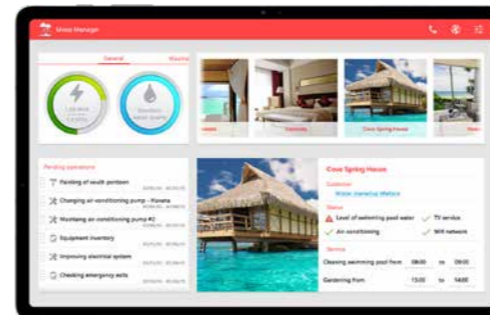
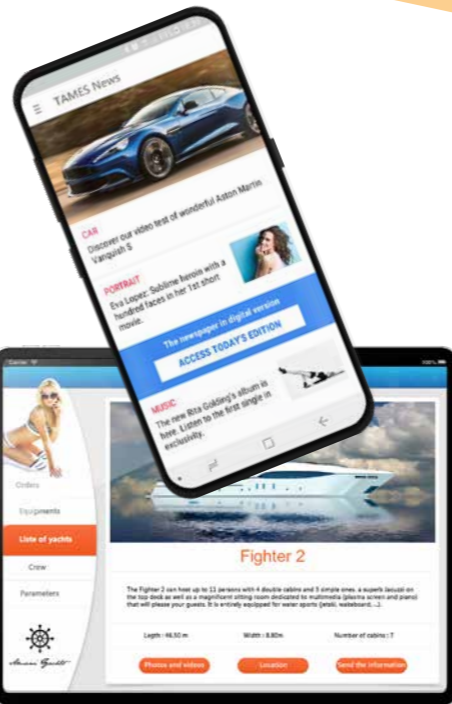
Game, quizz, MCQ, eLearning

Data aggregation

**time tracker** for service provider

Apps to be distributed on a **Store**

And any other application you may dream of: Price comparison, restaurant locator, **real-estate** application, construction equipment rental, catalog, wine list, telephony, address directory, plot management, medication list, ideal weight calculation, car check, interactive first aid, messenger...



## START NOW!

### EASY TRAINING!

WINDEV Mobile comes with a comprehensive online tutorial: training is easy.

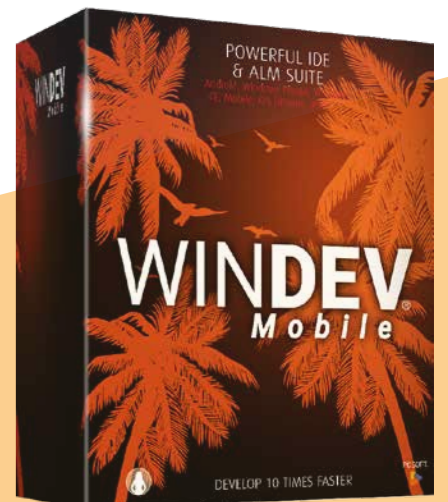
### ORDER TODAY, DEPLOY WITHIN A WEEK!

With the WINDEV Mobile Integrated Development Environment you can now develop on tablets, Smartphones and industrial terminals.

Mobile computing is taking over the world: over one billion smartphones will be sold in 2022.

WINDEV Mobile is your best ally for developing high performance applications on these devices.

### ORDER WINDEV MOBILE TODAY!



# WINDEV<sup>®</sup> Mobile

*DEVELOP 10 TIMES FASTER*



**FREE  
EXPRESS  
VERSION**  
Download now!  
Time-unlimited version

[WWW.WINDEV.COM](http://WWW.WINDEV.COM)

