YOU CAN START DEVELOPING ON MOBILE IN 10 MINUTES
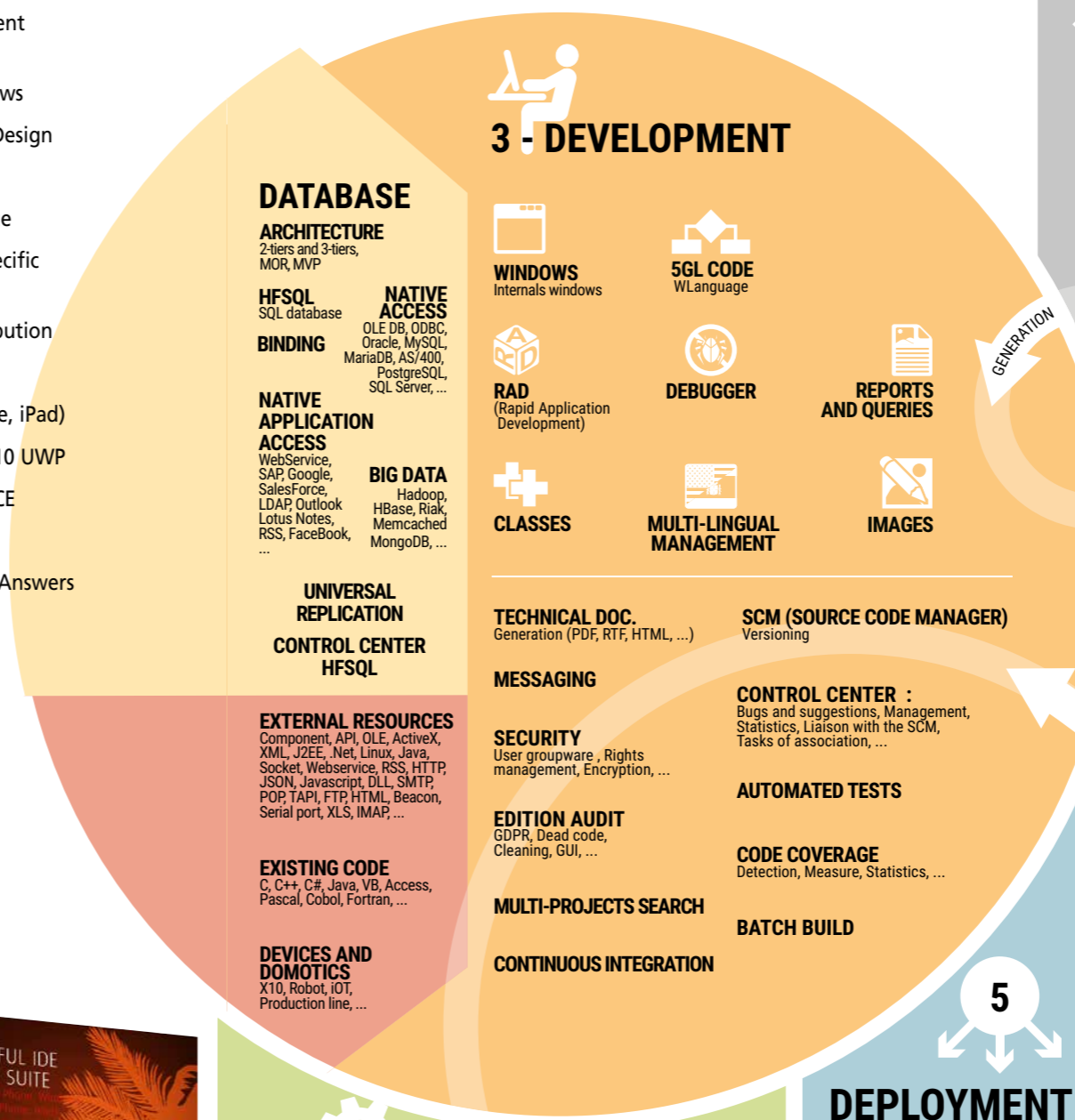
"Network and telecom"

- WINDEV Mobile is fantastic for developing apps for Smartphones, Tablets, Industrial devices.
- Thanks to WINDEV Mobile, you will develop native applications significantly faster.
- Do you have existing WINDEV applications? You can retrieve them directly.
- You can freely distribute your applications.

CONTENTS

THE MOST EXTENSIVE INTEGRATED DEVELOPENT ENVIRONMENT

1 - IDEAS, REQUIREMENTS

2 - CONCEPTION

REQUIREMENTS MANAGEMENT

UML 9 Diagrams

ANALYSIS Data structures, CDM, LDM

PATTERN RAD

STYLE BOOK

FLEXIBLE MODELING

TEMPLATES windows, reports, controls, ...

PROGRAMMING CHARTER

3 - DEVELOPMENT

DATABASE

ARCHITECTURE 2-tiers and 3-tiers, MOR, MVP

HFSQL SQL database

BINDING

NATIVE ACCESS OLE DB, ODBC, Oracle, MySQL, MariaDB, AS/400, PostgreSQL, SQL Server, ...

NATIVE APPLICATION ACCESS WebService, SAP, Google, SalesForce, LDAP, Outlook, Lotus Notes, RSS, FaceBook, ...

BIG DATA Hadoop, HBase, Riak, Memcached MongoDB, ...

UNIVERSAL REPLICATION

CONTROL CENTER HFSQL

EXTERNAL RESOURCES Component, API, OLE, ActiveX, XML, J2EE, .Net, Linux, Java, Socket, Webservice, RSS, HTTP, JSON, Javascript, DLL, SMTP, POP, TAPI, FTP, HTML, Beacon, Serial port, XLS, IMAP, ...

EXISTING CODE C, C++, C#, Java, VB, Access, Pascal, Cobol, Fortran, ...

DEVICES AND DOMOTICS X10, Robot, iOT, Production line, ...

WINDOWS Internals windows

5GL CODE WLanguage

RAD (Rapid Application Development)

DEBUGGER

REPORTS AND QUERIES

CLASSES

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TECHNICAL DOC. Generation (PDF, RTF, HTML, ...)

SCM (SOURCE CODE MANAGER) Versioning

MESSAGING

SECURITY User groupware , Rights management, Encryption, ...

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EDITION AUDIT GDPR, Dead code, Cleaning, GUI, ...

AUTOMATED TESTS

CODE COVERAGE Detection, Measure, Statistics, ...

MULTI-PROJECTS SEARCH

BATCH BUILD

CONTINUOUS INTEGRATION

GENERATION

RETRO ANALYSE

6 - MAINTENANCE AND EVOLUTION

MONITORING ROBOT

GENERATOR OF REPORTS AND QUERIES

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PROFILING

DYNAMIC AUDIT

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AAF (Automatic Applications Features)

4 GENERATION

UNIVERSAL WINDOWS PLATFORM

iOS iPhone and iPad

ANDROID Smartphones and tablets

WINDOWS MOBILE/CE

INDUSTRIAL TERMINALS

5 DEPLOYMENT

GOOGLE PLAY STORE

APPLE APPSTORE

WINDOWS STORE

DEPLOYMENT AD HOC & IN-HOUSE

WINDEV Mobile

POWERFUL IDE & ALM SUITE

NATIVE DEVELOPMENT ON ALL MOBILES

A complete development environment, adapted to the mobile world

YOUR APPLICATIONS ARE NATIVE & CROSS-PLATFORM

WINDOWS UWP   **iPad/iPhone**   **ANDROID**

One single project (same code, same windows, same queries) allows you to compile a native application for Android, iOS, UWP, Windows CE.
This same project also generates applications for Windows, Linux, and a dynamic website.
This universal portability of your source code ensures the reusability of your company's program history.

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 code, you can reuse it.

A STANDALONE DEVELOPMENT ENVIRONMENT

The development method is similar, regardless of the target equipment and the 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, devel-oping 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 but also UML Analysis Generator, Project Dashboard, Collaborative Source Code Manager, Programming Documentation Generator, Schedule Management,...

MOBILE-SPECIFIC FEATURES

WINDEV Mobile offers the most common development features and, of course, mobile-device-specific features such as: accelerometer, compass, GPS, 4G, SMS, bar codes, gestures...

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

PROGRAM IN 5GL: 90% LESS CODE

WLanguage, a 5th generation language, lets you develop faster than a traditional language. Its powerful functions make the code easier to write and read, simplifying both the development and the maintenance (see pages 14-15).
A mobile RAD even allows you to generate applications! (See page 10).
To discover the ease of use and the power of WLanguage, don't hesitate to download the free Express version of WINDEV Mobile.

TOTAL OPENNESS

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

ARE YOU FAMILIAR WITH WINDEV ?

You develop your way, in WLanguage, with the added benefit of a familiar environment and the possibility of re-using your existing code.

COMPATIBILITY WITH WINDEV APPLICATIONS

You have WINDEV applications?
The compatibility between WINDEV and WINDEV Mobile is amazing: code, analyses, UML, classes, queries, controls!
You can reuse and share most of the code, classes, queries and UI.

Database programming is identical.
Given that the mobile screens are smaller, you just need to resize the WINDEV windows, and enlarge the buttons to easily tap on them... which is very easy!
Thus, you re-use existing elements on mobiles.

FREE EXPRESS VERSION Download now!

WINDEV Mobile
Your code is multi-platform

iPad

Industrial and on-board devices

iOS

Windows CE
Still used in industrial settings

iPhone

PC

Tablet

Windows 10 UWP

Android

Tablet

Phone

Chromebook

ANDROID, IOS, WINDOWS UWP, WINDOWS CE

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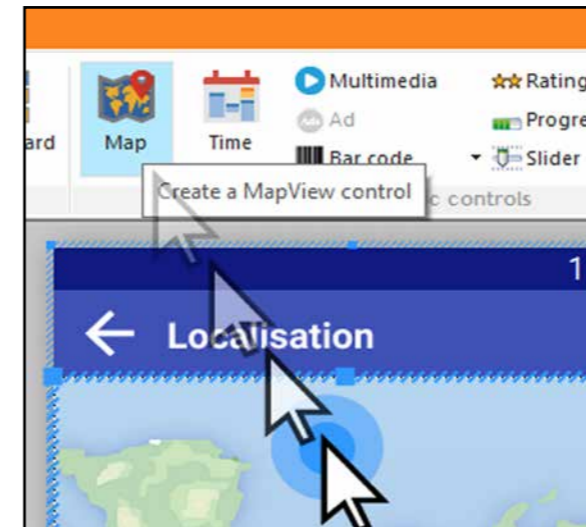Recompile!

ANY TYPE OF MOBILE

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

Windows CE   Android   iPhone

iPad   Android   Windows 10 UWP

CREATE CONTROLS USING DRAG & DROP

Controls are created 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,...
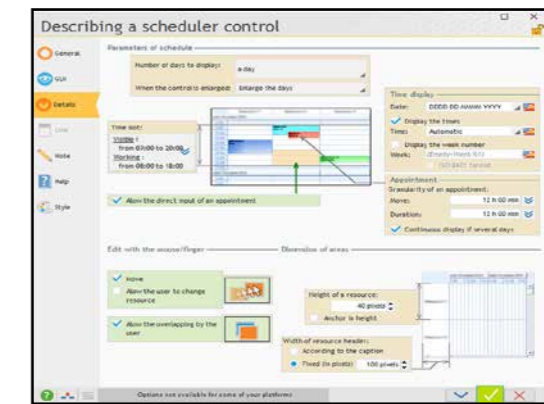
POWERFUL VISUAL EDITOR FOR USER INTERFACE (WINDOWS AND CONTROLS)

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 UI generator (User Interface: windows and their content) considered to be the most efficient in the world.

The assisted window construction is 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.

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 portait and landscape modes are supported.

WINDOW ANIMATIONS

Opening a window can be paired with an animation: right and left swipe, parallax, label flip, overlap, spin, zoom back / forward, scrolling panel, sweep, rotating cube...

VERY POWERFUL CONTROLS

Controls allow you to create ergonomic windows, simply dragging and dropping them from the window editor.

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

An edit control offers, without any programming, dozens of automatic features, input masks and security checks: mandatory input, convert to uppercase, allowed types of characters in input, direct link to the database,...

These features are defined from the window editor using the "7-tab" technology. They can also be modified by programming if necessary.
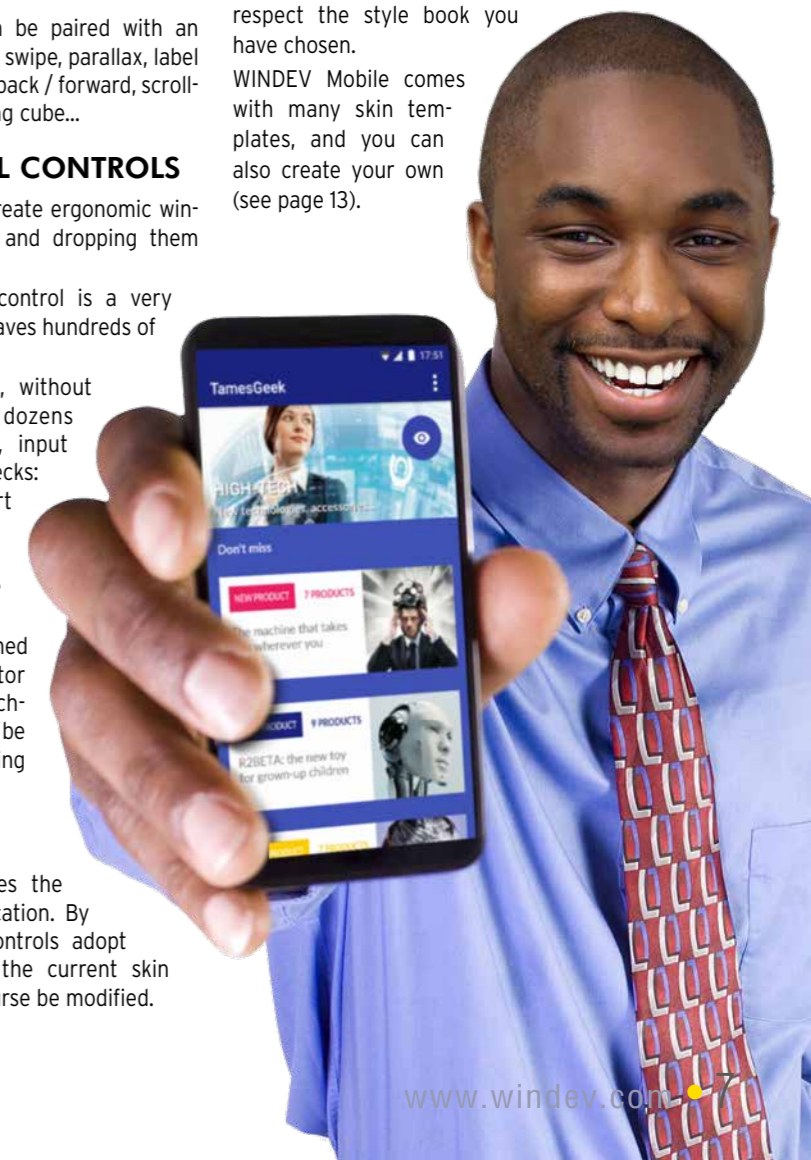
STYLE BOOK

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).
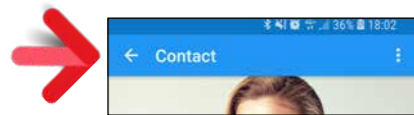
ADAPTIVE DESIGN

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 an "action bar" at the top of the windows.

On iOS, the application must have a navigation bar with a "Back" button.

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 : an **Action Bar** appears on Android devices, and an **iOS navigation bar** appears on Apple devices: it's automatic.*
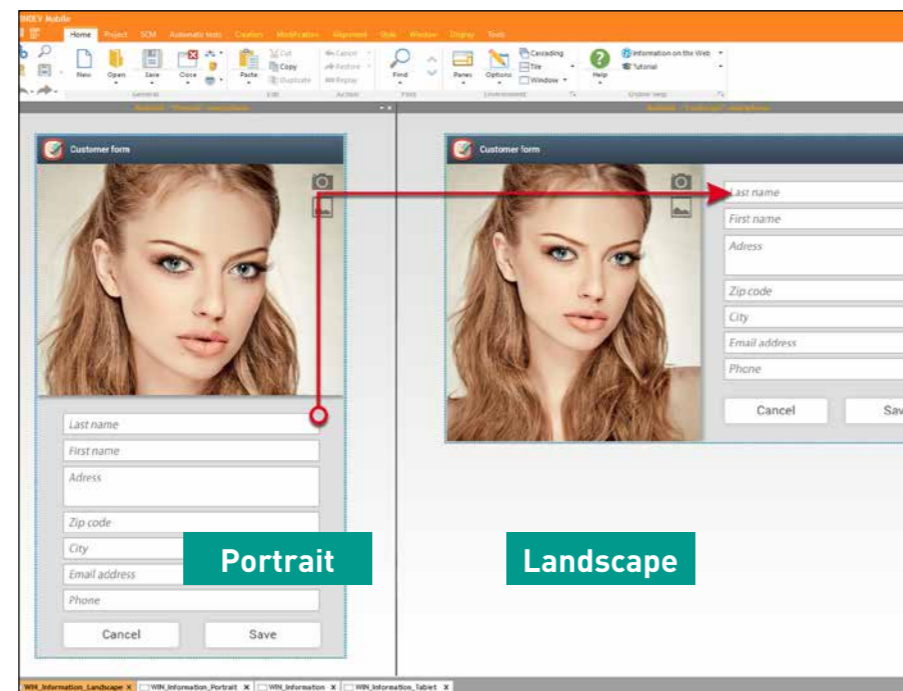
Note the different position of the controls based on the screen's orientation. The developer sets each position.

If there is one thing that varies among mobile devices is the size of their screens!

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

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

It's easy with the Adaptive Design feature 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 texts are located below an image, but in landscape mode, they are located 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.

Portrait | Landscape

THE LAYOUT CONTROL

The Layout control in WINDEV Mobile allows for the automatic repositioning of the window's content at runtime when switching to "invisible" control by programming.
This prevents having "holes" 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.

Phones from different manufacturers don't have the same screen size, tablets are available in several screen sizes, etc.

This multiple viewing can also be useful when developing for a single system, single device, to view the result for 3 screen sizes for different phones.

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.

In this multiple editing mode, when a control is added to a window, it automatically comes up in all the other views...

Everything is dynamic.

Multi-view editing is completed by the visualization panel (see next page).

Tablet landscape | Tablet portrait | Phone portrait | Phone landscape
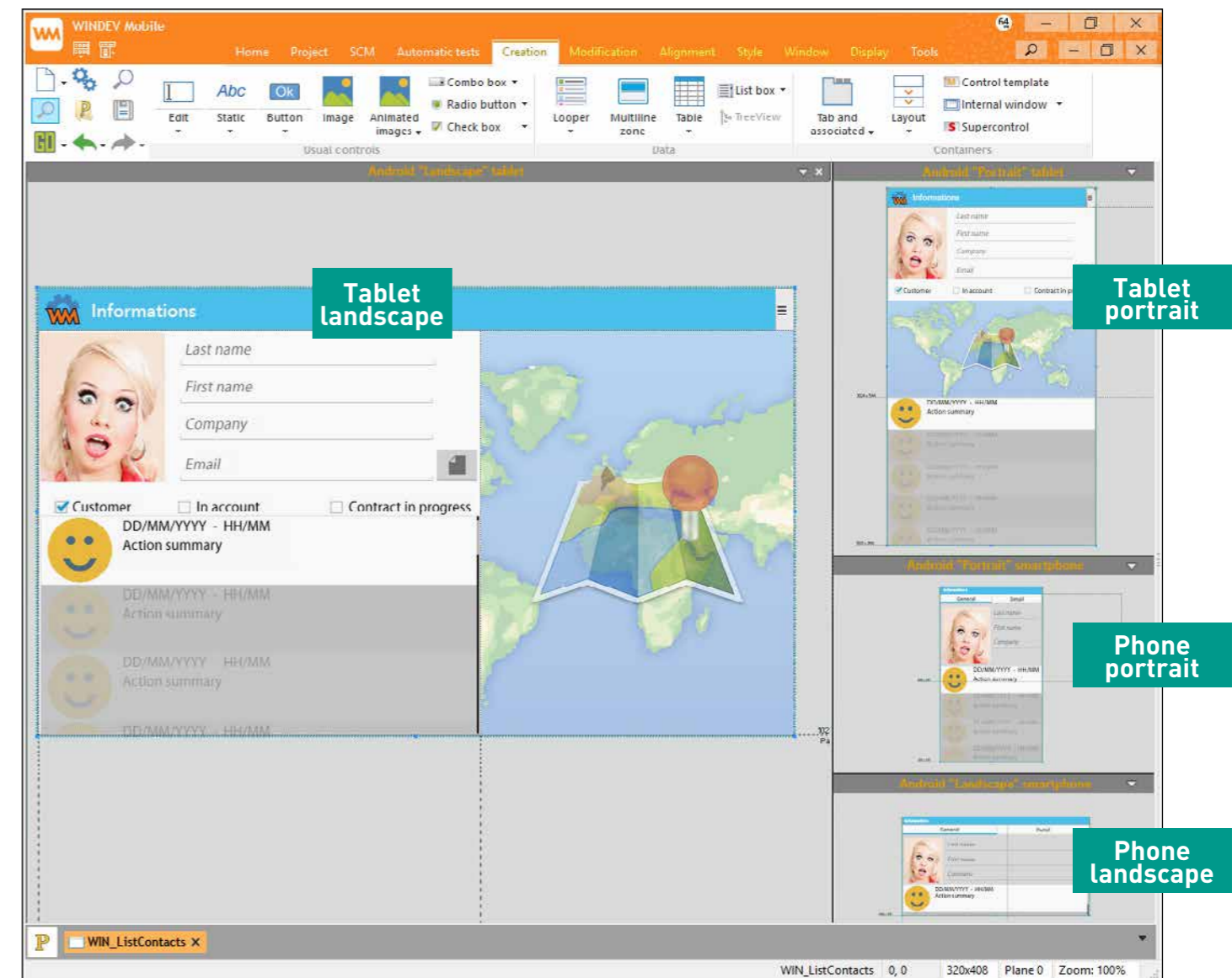
VIEW AND CHECK YOUR WINDOWS ON ALL DEVICES : THE VIEW PANEL

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 X, iPhone 8, Samsung Galaxy S8, 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 targeted devices::
• correctly positioned anchors
• management of landscape/portrait mode
• operating mode on screens with different resolutions
• checking layouts: proper dissociation of sizes, positions and anchors
• compatibility of fonts
• ...

The viewing is performed in real time.

Each device can be zoomed in.

Clicking a device starts the "test" window (window GO) in order to test the behavior and navigation (UX).
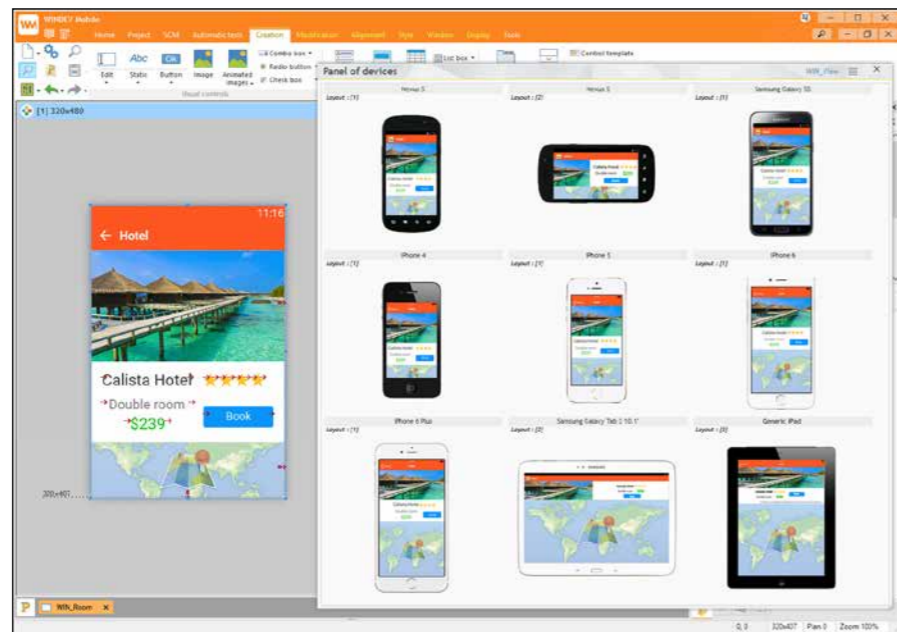
The panel is updated in real time in the editor: you can immediately see the results of your modifications

---

RAD

MOBILE RAD: WONDERFUL WINDOWS

Need to quickly generate a Form Management from one or several data files of the analysis? That is what the RAD does!

Tablets and phones do not have the same use mode. 2 types of RAD are proposed: a RAD for tablets, a RAD for phones.

A single application can contain both windows for phones and windows for tablets: the appropriate window will be opened on the relevant device.

The Window RAD offers 14 new templates, as well as a large number of preset windows.

MOBILE RAD FOR PHONES

Several RAD templates for phones are available.

These templates are adapted to phone screen sizes, as well as to their standard operating mode:
• Image + Read-only form
• Image + Editable form
• Image + Long text
• Editable form
• Form + Looper
• Image gallery
• Looper
• Multiline Zone
• ...
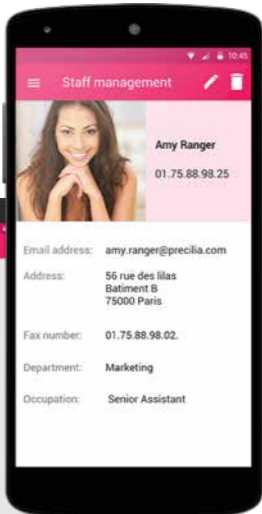
MOBILE RAD FOR TABLETS

Several RAD templates for tablets are proposed.

These templates are adapted to tablets.

Thanks to the powerful "Adaptive Design" concept, these RAD templates are adapted to the size and orientation of all tablet screens.

The RAD automatically generates the necessary layouts, adapted to the selected pattern.

Among the templates for tablets:
• Image + Read-only form
• Image + Form in edit
• Image + Long text
• Image gallery
• Looper + Read-only form
• Multiline Zone + Read-only form...

MOBILE RAD : THE GENERATED CODE

The Mobile RAD generates clear code, easy to understand, that can be easily re-used and maintained.

Several wizards asks questions adapted to each pattern. The links with the data are automatically generated.
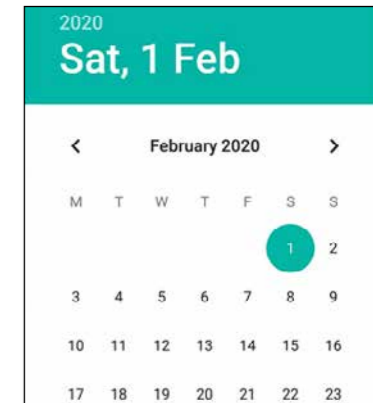

CONTROLS

"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 features dozens, even hundreds of automated features as well as integrated security.

The detailed features of each control are so rich that they take a few hundred pages of description!

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

STYLES

A style defines the characteristics of a control. Thanks to the notion of style, a control's look instantly respects 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, ...
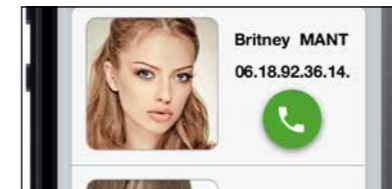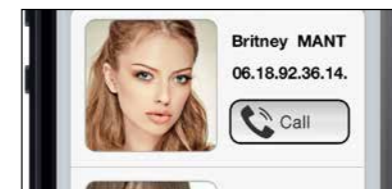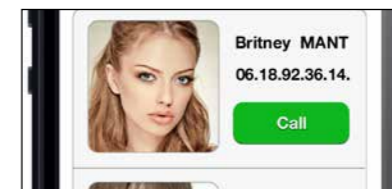
The "Call" button adopts three different styles here. Change style? 1 click

EDIT CONTROL

The "edit" control (input) is used for data entry and information display. 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.
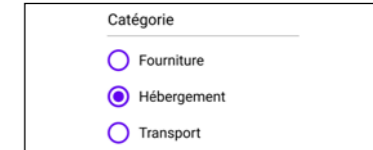
STATIC

The "Static" control lets you display information, from your code, a process or a database.

Everything can be customized: font, color, border,...

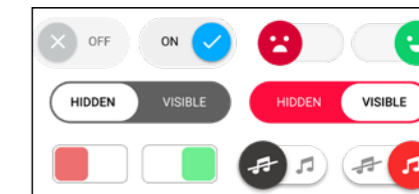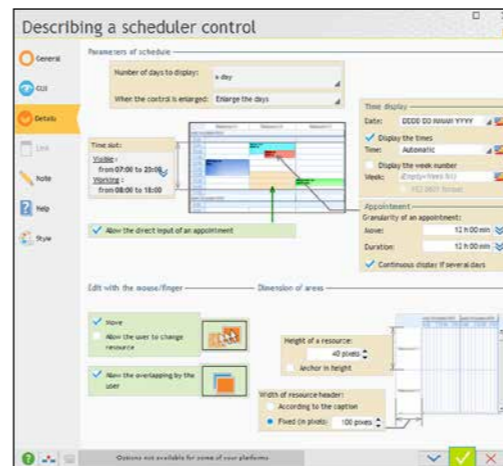The caption can be formated: currency,...

RADIO BUTTON

The "Radio Button" control allows the user to perform a choice in a list.

CHECK BOX

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

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.

COMBO BOX

The "Combo Box" control is used to expand a list of choices in order for the user to choose one.

When expanded by the user, a barrel may come up for the user to perform his or her selection.

IMAGE

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.

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.
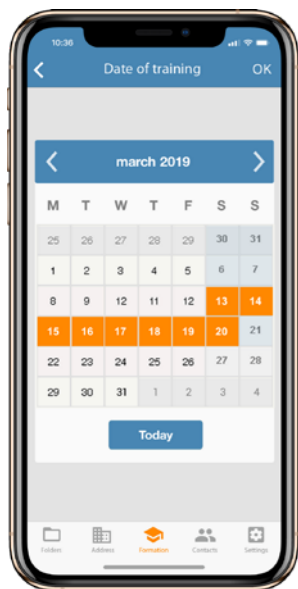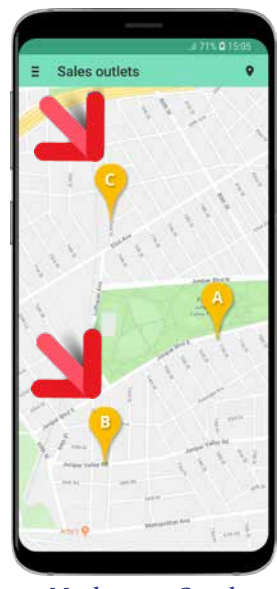
CALENDAR

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

IMAGE GALLERY

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.

LIST BOX

The "List Box" control is used to display a list of information defined by the programming, 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 control allows you to find a location, create an itinerary, display points of Interest (P.O.I.) and itineraries, ...

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

The **Maker** type is used to position P.O.I. on a map. The symbol that represents these P.O.I. can be customized with the `..Image` property.

Markers on Google Maps

Example of markers

RATING CONTROL

The "rating" control lets you enter a rating (review).

In addition to stars, several visual symbols are provided.
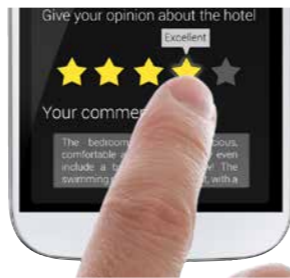
SLIDER CONTROL
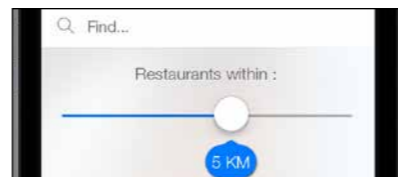
The "Slider" control is available.
A style can be applied to the slider.

EASY CHARTS

A chart designer is available with WINDEV Mobile: you create charts on Mobile devices without any programming.

The real-time display of data is supported.

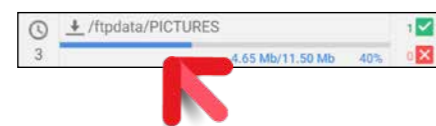## TAB

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

When navigating between tabs, transition effects automatically come up.
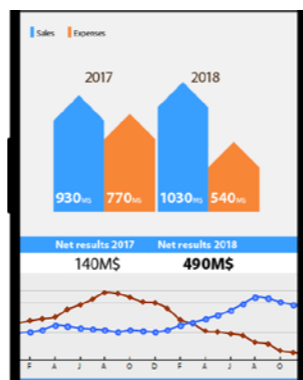
The "swipe" gesture is available.

PROGRESS BAR CONTROL

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

INTERNAL WINDOW

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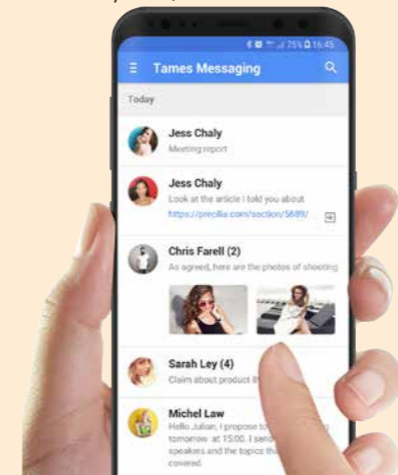
MANAGEMENT OF PLANES

In the windows, it is possible to manage controls over multiple planes.

CONTROL TEMPLATE : INHERITANCE

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

LOOPER

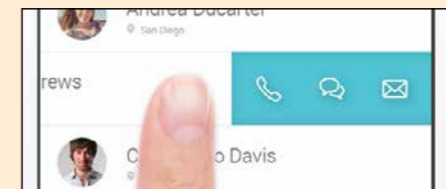The "Looper" control lets you display a set of controls by rows, often filled from a database.

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.

Horizontal scroll

TABLE CONTROL

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

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

DASHBOARD CONTROL

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

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.

PLAYING VIDEOS
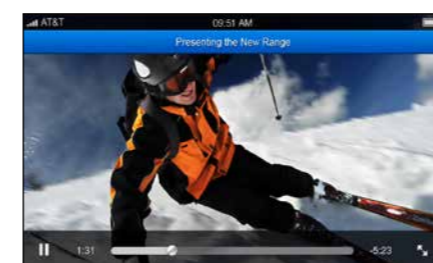
HTML CONTROL

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 control can interact with WLanguage and Javascript.
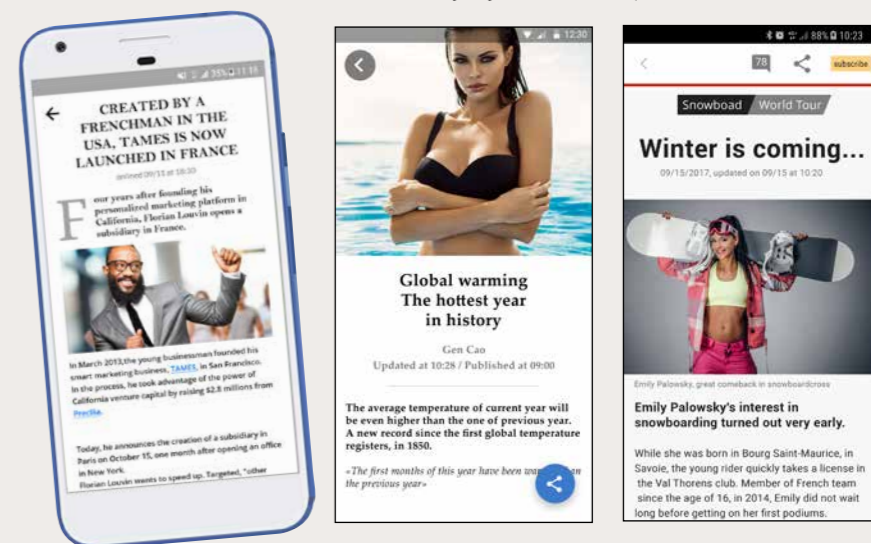
The "multimedia" control allows you to automatically read -

video files as well as music files.

The most popular audio and video formats are supported: MP3, AVI, Wav, ...

CAMERA

The "camera' control allows you to take pictures or film a video, and to retrieve the result (also see page 17).

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 let you automatically apply a look to the windows of the applications you create.

```
// 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 posi-
tion

        StoreLocation is geoPosition
        StoreLocation..Latitude = Store.Latitude
        StoreLocation..Longitude = Store.Longitude
```

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 posi-
tion

        StoreLocation is geoPosition
        StoreLocation..Latitude = Store.Latitude
        StoreLocation..Longitude = Store.Longitude

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

WLanguage is also available in Chinese.

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 different types of text 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.

SOAP & REST WEB SERVICES

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.

MULTI-PLATFORM

Code written in WLanguage is multi-platform: 32 or 64 bits, Android, iOS and UWP but also Windows, Linux, Java, Javascript, PHP, ... : an unrivalled advantage.

CONDITIONAL TARGET CODE

For a given process, the code editor lets you enter different lines of code depending on the runtime platform.

The correct code will be automatically compiled according to the target. Thus, a single source code can contain platform-specific code: NFC, stylus management...

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.

WLANGUAGE : 5TH GENERATION LANGUAGE

The integrated WINDEV Mobile language, WLanguage, is powerful, simple and intuitive. It is a 5th generation cross-platform language (5GL): commands are powerful.

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

EASE AND POWER: A NATURAL LANGUAGE

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

The code can be written quickly and it is easy to proofread.

Coding and maintenance are therefore much easier to do.

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

Do you understand this code?
Yes, because WLanguage is easy to read.

WLANGUAGE FUNCTION FAMILIES

In addition to the traditional commands of a programming language (For, If Then Else, While, etc.) WLanguage proposes 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 .

These are the "Function families":

Window management
Window controls management
Action Bar management
Mathematical functions
View table management
Management of character strings
Dates and times
Calendar functions
Scheduler functions
Multiline Zone functions
Internal Window functions

Functions for managing 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
• Useful commands
• Custom error management
• Filter management (temporarily store part of the table on disk)
• Trigger management
• Replication
• Transactions
• Other functions
Print functions
Handling List Box and Combo Box controls
Functions for managing binary values
Financial functions
Managing the matrices
Statistical functions
Image animation
Multimedia function (video, sound, ...)
Functions for managing memory zones
Multilingual functions
FTP & secure FTP functions
NFC functions

Beacon functions
Bluetooth LE functions
XML native 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
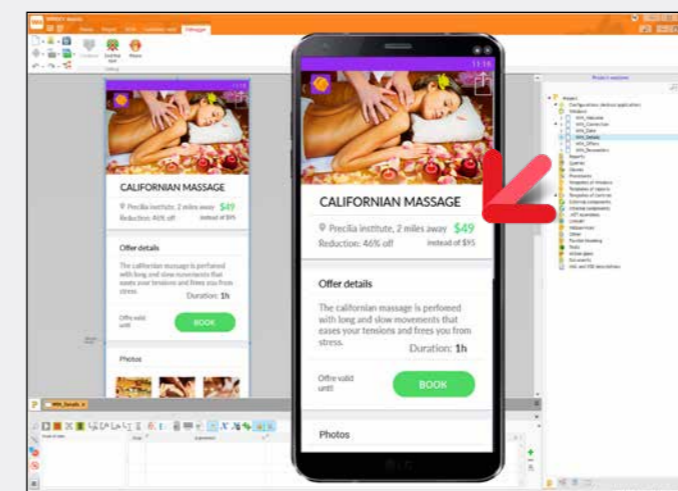Map functions
Facebook functions
Etc...

Discover the complete list of WLanguage commands on doc.windev.com

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.
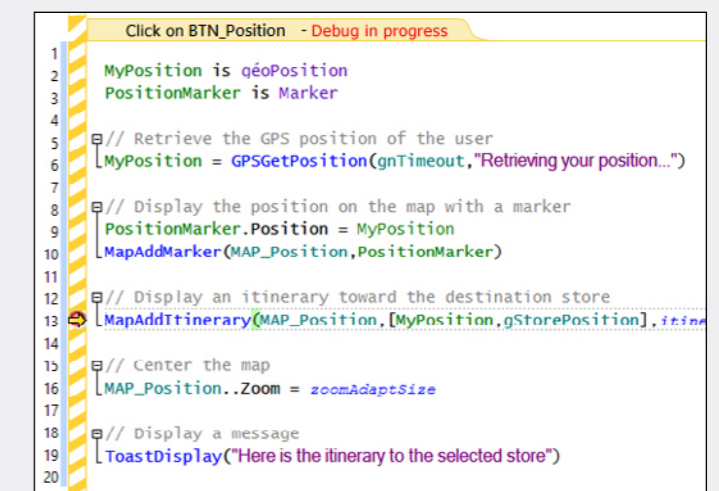
DIRECT DEBUGGING ON IPHONE/IPAD

In iOS, debugging can be done directly on the device; see page 25.

A POWERFUL DEBUGGER

The debugger offers advanced features: break points, resume, on the fly code modification, view variables' content... Bonus: the code editor can have a black background.

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

Code debugging in progress

MOBILE-SPECIFIC FEATURES

WLANGUAGE : 90% LESS CODE

WINDEV Mobile uses 5th generation language : "WLanguage" (see previous pages).

All the usual features of a powerful programming language are available: variable declaration, assignment, loops, OOP, etc...
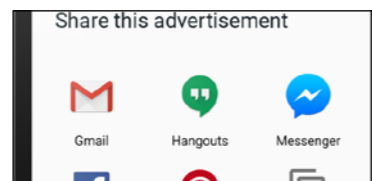
Easy to learn and very powerful, WLanguage saves precious time for development teams.

Download the free Express version to discover WLanguage).

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.

CUSTOMIZING THE VIRTUAL KEYBOARD

The virtual keyboard comes up when needed if the device doesn't have a physical keyboard.

One button on this keyboard can be customized by your applications: key @,...

WI-FI

Wi-Fi support is very complete in WINDEV Mobile.

The `WiFi` functions offer all the features required to manage Wi-Fi.
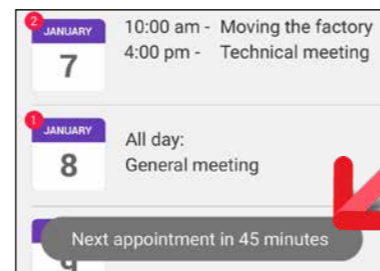
BLUETOOTH

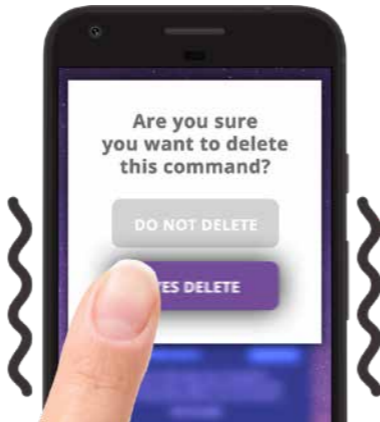Bluetooth support with WINDEV Mobile is also very complete.

The Bluetooth LE standard (for Low Energy), used mainly to manage connected devices (IoT), is supported.

`BT` functions offer many features, including :

- list of Bluetooth devices
- change in the phone's visibility
- accept connections
- get information about a device
- ...

SHARING FUNCTIONS (EMAIL/SMS/FACEBOOK, ETC.)

The standard window used to share content can be displayed automatically.

Display a toast type message

MAKE THE PHONE VIBRATE!

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

TOAST

A Toast is an informational message that pops up on the screen to notify the user without requiring any validation, and without the message blocking anything.

To display a toast, simply use the `ToastDisplay` function.

ENABLE/DISABLE AN APPLICATION

The application events `Activation` and `Deactivation` allow to define a process when the application is sent to the background or reactivated by the user.

This is used, for example, to refresh data automatically, or to request a password when the application is reactivated.

SPLASH SCREEN WHEN STARTING THE APPLICATION

A splash screen can be automatically displayed when starting the application.

Several parameters can be used to customize the launching of the splash screen.

CONTACT LIST ACCESS

Reading, searching, creating, modifying and deleting contacts from the phone is managed by WLanguage through the `Contact` function family.

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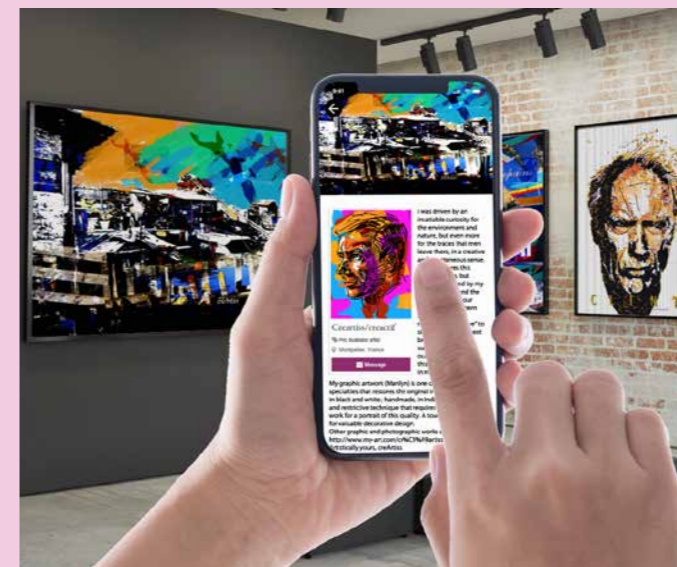
ACTION/ NAVIGATION BAR

«Navigation bar» (on iOS)

«Action bar» (on Android)

You can customize the Action Bar (Android) and the Active Bar (iOS): the icons included, the popup menu, and the presence of a "back" button or not, panes, ...

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

RFID

WLanguage allows you to manage RFID.

NFC

WLanguage allows you to manage NFC.

CAMERA/PHOTO CONTROL

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

Photos and videos are supported.

What can be viewed can be saved (JPG and PNG format, 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 the headquarters.

MULTIMEDIA SUPPORT

In addition to the powerful Multimedia control, some multimedia functions are available in WLanguage.

For example, the application can add images to the photo album, or retrieve images by date from the photo album.

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!

...

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

A mobile device is often touch-enabled: applications are at your finger tip(s)!.

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

There are events to support these processes in your code: vertical or horizontal move with one or more fingers while keeping them in contact with the screen, small movement of one or more fingers on the screen, spreading or pinching on the screen.

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

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

On iOS, 3D Touch is supported.

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 the batteries!

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

MQTT
The MQTT (MQ Telemetry Transport) protocol is supported.

BEACON
The WLanguage Beacon functions make it possible to manage beacons.

Polar - Heart rate sensor H7

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.

SEND AN SMS

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.

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 may be useful for an application to know whether it is connected to the Internet via Wi-Fi or 3G/4G.

For example, if the signal is weak, a data transfer can be forbidden.

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

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.

LOG IN TO YOUR APPLICATIONS VIA TWITTER, FACEBOOK, INSTAGRAM...

Here 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!).

The benefit for the end user is that there are fewer passwords to remember.

WINDEV Mobile lets you easily implement this type of authentication in your applications (oAuth2 protocol).

ICALENDAR

iCalendar is a standard to exchange calendar and scheduler data.

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

WINDEV Mobile allows you to easily read and write data in an iCalendar file. And to display it, of course.

FINANCE

The financial management functions of WLanguage are available.

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 the XML file becomes child's play because the tags can be handled "in clear" in the source code. For example, `Book[1].Author` accesses the content of the "Author" tag of the first book in the XML file.

JSON

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

FTP FUNCTIONS

The FTP protocol is a file transfer protocol. The WLanguage offers the `FTP` function family.

This enables automatic data and document exchange through programming.

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.

API : NATIVE CALLBACK TO WLANGUAGE

You can use APIs that call Callback procedures.

RUN A PROCESS IN THE BACKGROUND WITHOUT CONSUMING POWER

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

All you have to do is specify the frequency at which this process will be run.

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

INAPP PURCHASE AND SUBSCRIPTION
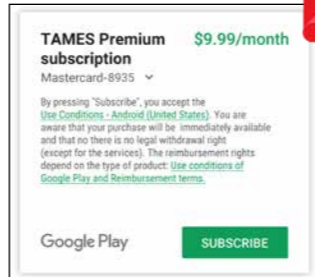
InApp purchase from an application (here on Android)

In an app, it is sometimes possible to buy options for the app itself, or to subscribe to certain features.

This purchase or subscription is also done via the store, and is called "InApp purchase" then.

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

SLIDING MENU SLIDING WINDOW
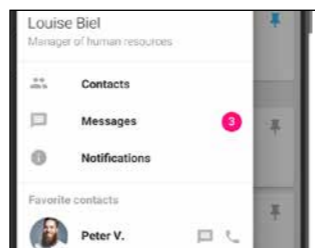
Sliding window.
The window below appears grayed

PUSH NOTIFICATION

A notification is a message that is displayed on the terminal 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, if a led must be turned on, 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.
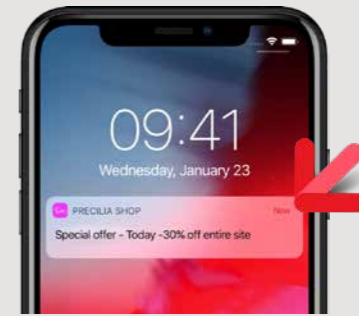
Display of a Push notification

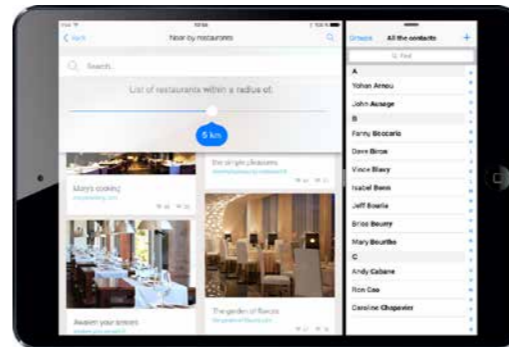A window can appear from the left or from the right of the screen.

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

A typical use for this display is the display of a list of choices, or the configuration of an app.

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

SPLIT WINDOW

On devices where split is supported, 2 windows from 2 different WINDEV Mobile applications can be displayed simultaneously side by side.

READ BAR CODES AND QR CODES

The following bar codes QR Code, PDF147, UPC-E, Code39, Code93, Code128, Aztec, EAN 8, EAN 13, DataMatrix are decoded.

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

DISPLAY BAR CODES ON THE SCREEN

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

PRINTING IN PDF

It is easy to print in PDF format.

In iOS and UWP printing is done either via programming or via a report.

On Android, PDFs are printed by programming, or generated by the report.

NATIVE IOS & ANDROID FONTS

iOS is using character fonts among which some of them are specific to Apple: AppleGothic, ... These fonts are owned by Apple.

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.

The native font will be used when running the application.

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.

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.

HOURGLASS

In the system bar, an icon in the shape of a turning wheel comes up when an app sends data via a wireless network : WiFi, 4G,...

The `NetworkHourglass` function lets you show this icon or not.

GEOLOCATION WITHOUT DRAINING BATTERIES

This feature automatically calls a procedure when the device is moved a significant distance. This call is performed directly by the operating system, even is the device is closed.

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

MANAGE CONNECTION LOSS AND RECOVERY

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

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.

You can specify the procedure to call in case of a connection loss or a reconnection.

PREVENT THE DEVICE FROM GOING TO SLEEP

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

A function parameter allows you to authorize or not the device to go to sleep depending on whether it is uses AC power or batteries.

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

GESTURES ON CHARTS

Gestures are supported on charts.

The chart can be moved using a finger. With 2 fingers, the user can enlarge or reduce the size of a chart. A double "tap" restores the original scale.

CREATE AN ITINER-ARY ON THE MAP CONTROL
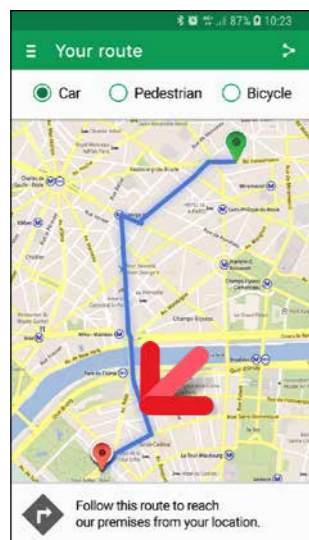
The itinerary is defined by the application in WINDEV Mobile

On a Google map, the **MapAddItinerary** type functions let you easily define an itinerary.

## BUTTON FIXED ON THE SCREEN (FLOATING IN THE WINDOW)
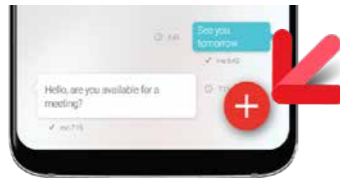
A floating button is fixed on the screen: it floats in the window.

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

This type of button allows you to create applications with the Material Design style.

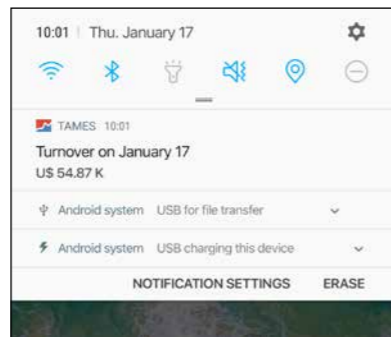## WRITING A NUMBER ON AN APPLICATION'S ICON

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

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

NOTIFICATION
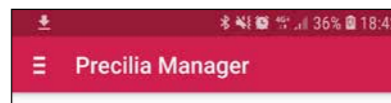
A notification at the top of the screen

The 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.

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.

TELEMETRY ON YOUR APPLICATIONS

Telemetry allows you to know precisely how your applications are used: frequency of launch, windows, controls and buttons used, equipment details, duration of actions, "top 10",...

This is particularly useful for mobile applications where designers do not necessarily have contact with users.

WINDEV Mobile offers powerful telemetry features as standard.

FINDING OUT A DEVICE'S UNIQUE IDENTIFIER

Each Android or iOS device (phone, tablet) has a unique number inserted by the manufacturer (the ROM provider specifically).

The **sysIdentifier** function lets you read this number.

This number can be used to allow an application to work only on identified devices.

POPUP

The opening of popup window is supported.

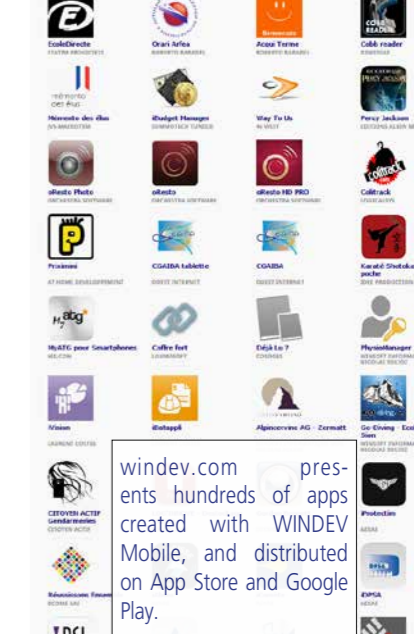You can also create non-maximized and clipped windows.
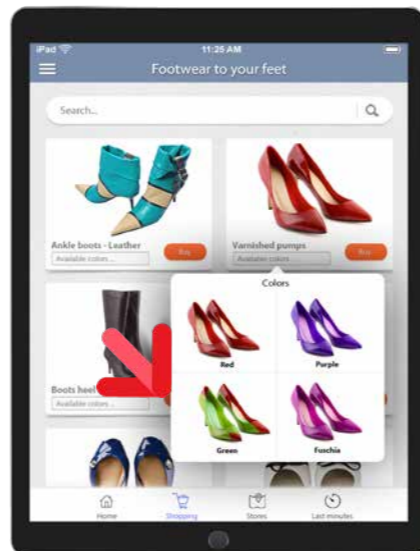
Here, a "PopUp" for selecting the color of a pair of heels

SECURE HTTPS AND WEBSERVICES

The use of secure connections and Webservices is possible.

DISTRIBUTION OF YOUR APPLICATIONS

DEPLOYMENT BY DIRECT SETUP

The internal applications of a company are in most cases installed directly on the devices.

It's easy thanks to WINDEV Mobile.

Each operating system has its own deployment policy, Android and Windows are rather flexible, Apple imposes particular constraints. Everything is detailed in the "Specific features" sections of each system (p. 23, 24 and 27).
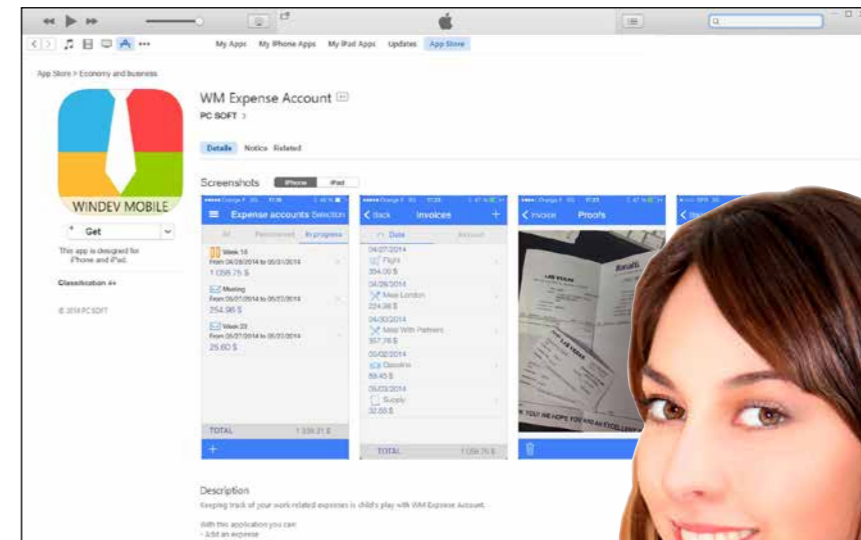
DEPLOYMENT VIA STORES

Applications developed with WINDEV Mobile can be easily deployed on PlayStore, Apple Store and Windows Store, for free or paid distribution.

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

Please check the "specific features" section for each system in the following pages.

PACKAGE OR BUNDLE CREATION

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)

If necessary, an automatic extraction mechanism from the downloaded package allows databases to be automatically installed on the mobile phone.

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

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

ANDROID SPECIFIC FEATURES

WINDEV MOBILE allows you to create native applications for iPhone, iPad and iPod Touch, Android, Windows CE, 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 still use these specific features, simply use "conditional target code" (see p 14).

PRESET WINDOWS

To create your windows even faster, WINDEV Mobile offers a set of predefined windows in the Android standard: simply start with a window that resembles what you want to create.

Examples of preset windows

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!

"MATERIAL DESIGN" STYLE

The Material Design style was made popular by Google.

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

GOOGLE CLOUD PRINT FUNCTIONS

The `GglPrintDocument` function allows you to print an existing document via Google's cloud print.

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

NFC : DATA TRANSFER AND CONTACTLESS PAYMENT (READ / WRITE)

WINDEV Mobile brings easy NFC support to your applications.

NFC, an acronym for Near Field Communication, allows contactless data transfer between two mobile devices, or a mobile device and a chip that can be integrated almost anywhere (in a tag, bracelet or another device...).

On Android devices, it is possible to read and also write data .

The `NFC` family of functions makes programming easy: `NFCReadTag`, `NFCWriteTag`, `NFCSendTag` and `NFCStatus`are used to manage the NFC standard.

Thanks to this standard, it is now possible to exchange data between 2 smartphones just by having them close to each other.

Contactless payment also exists thanks to this standard.

CONTROL AN ANDROID OR TIZEN WATCH

It is easy to create notifications specifically for smart watches that use Android or Tizen. Notifications can launch actions.

NOTIFICATIONS

On Android, there is an additional type of notification by lighting the front LED. WINDEV Mobile also handles these notifications.

Turn on the phone LED in the color of your choice

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.

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...

CALLING JAVA (AND MAVEN) LIBRARIES

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 directly enter Java code in lieu of WLanguage code (feature useful for troubleshooting!).

INDUSTRIAL DEVICES

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

DEX DOCK

Applications developed with WINDEV Mobile work with DEX devices.

ANDROID DEPLOYMENT: EASY

Your applications can be easily deployed :
- by copying the application directly from the PC to the device,
- by using "Play Store".

The applications deployed on Play Store can be free or not. If the application is not free, you get revenues every time your application is downloaded.
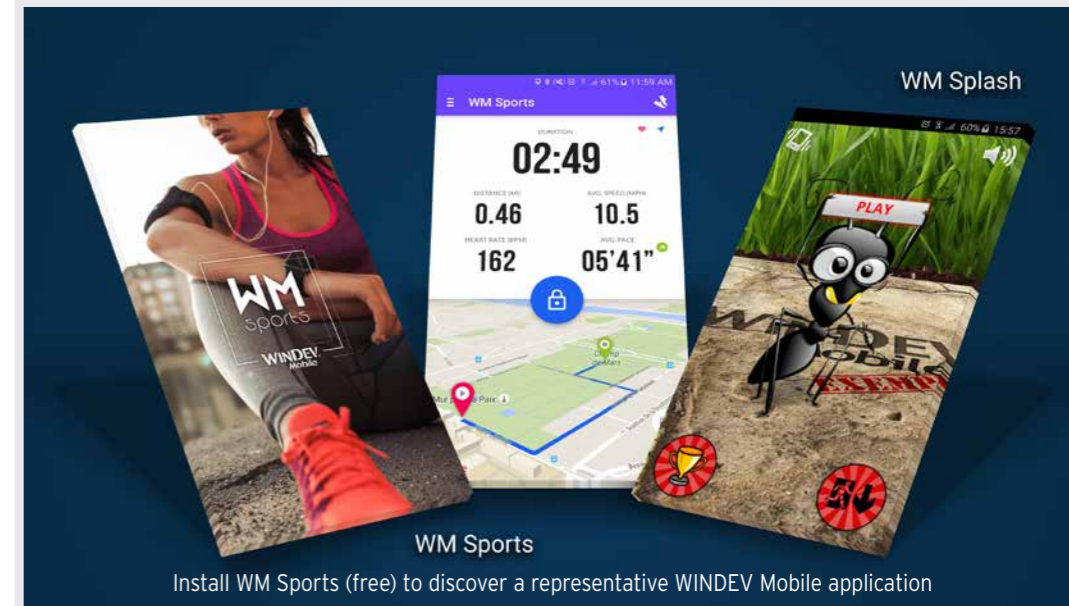
To be deployed, an application must be signed.

The signature functionalities are provided by WINDEV Mobile.

Deploying an Android application developed with WINDEV Mobile is very easy!

AVAILABLE EXAMPLES

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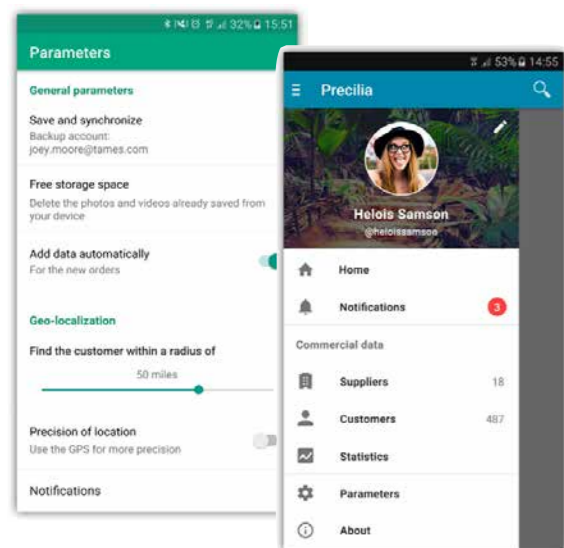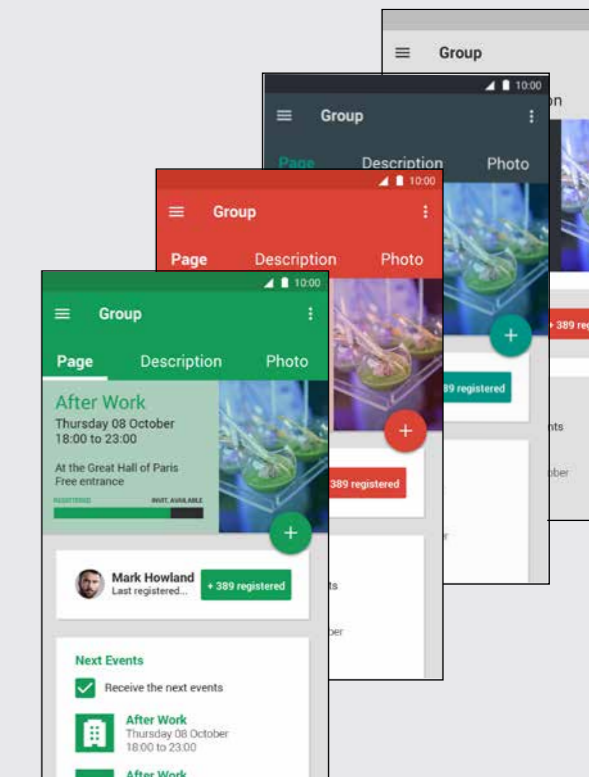
ANDROID EXAMPLES

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 the Play Store.
- **FTP Client** : FTP client for Android device. Available on the Play Store.
- **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** : creation of a password "chest" (digicode, internet sites, etc.). Available on the Play Store.
- **Notes (reminder)** : graphic note taking
- **Speech synthesis** : example of the use of speech synthesis features
- **System** : example for using system features specific tio Android (toast, notifications, Wi-Fi, ...)
- **Game** : example of gaming application, usually intended for Play Store distribution. Available on the Play Store.
- **Inventory** : inventory with backup in a database
- **Expense accounts** : fill in and follow-up expense accounts. Available on the Play Store.
- **WM Food** : Displays the composition of a food product by scanning its barcode (base Openfoodfacts). Available on the Play Store.
- **Poll** : manage a poll on a tablet.
- **Shopping** : Shopping list management. Available on the Play Store.
- **Quiz** : Quiz management.
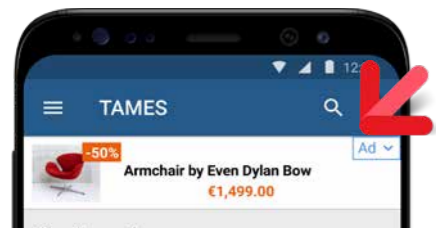- **ToDo List** : management of a task list
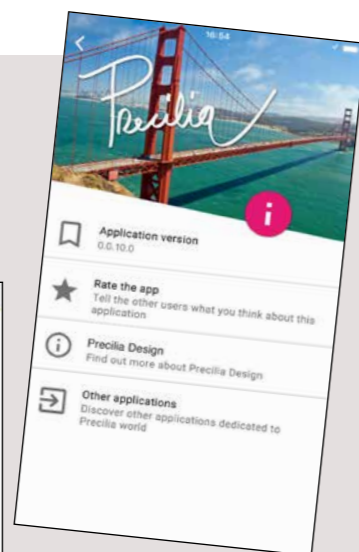- ...

IOS
SPECIFIC FEATURES

WINDEV MOBILE allows you to create native applications for iOS, Android, Windows 10 UWP, Windows CE, etc.
In addition to the controls and features presented before, WINDEV Mobile offers specific features for **iOS**.
The following features are available in addition to the common features.
To develop a cross-platform application and still use these specific features, simply use "conditional target code" (see p 14).

PRESET WINDOWS

To create your windows even faster, WINDEV Mobile offers a set of predefined windows in the iOS standard: simply start with a window that resembles what you want to create.

Examples of preset windows

CHOOSE THE SYSTEM BAR AND NAVIGATION BAR

WINDEV Mobile allows the application to choose, for each window:
• not to have a system bar,
• have a system bar,
• choose its navigation bar.

3 examples of system bars

APPLE MAP CONTROL

The Map control allows to display a map in formats supported by the iPhone: Google Maps and 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...
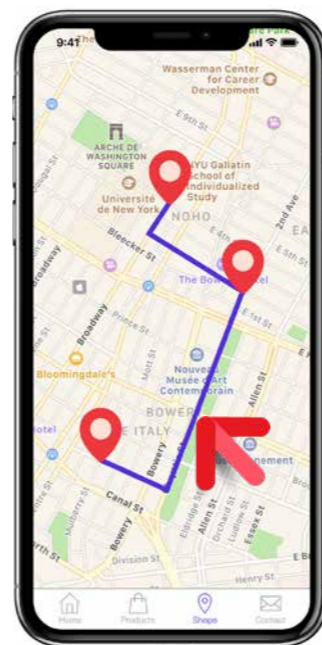
SHARING FILES VIA ITUNES

An iOS application can be authorized to share files with a PC or a Mac.
The end user can work with his data on the hardware of his choice.
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 applications can communicate with apps on iPones or iPads.
Over 300 WLanguage functions are already available.

CREATE PDF REPORTS

WINDEV Mobile allows you to create PDF reports with the powerful report editor.
You have all the power of reports: visual positioning, bar codes, charts, tables, multi-columns, images, etc.

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.

ALL THE IOS DEVICES ARE 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.
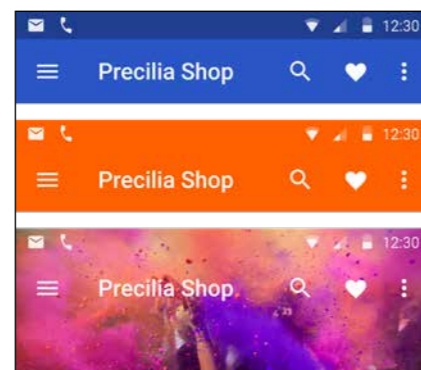
TEST AND DEBUG APPLICATION UNDER DEVELOPMENT DIRECTLY ON IPHONE, WITHOUT MAC

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...

WINDEV Mobile application on iPad mini

IOS DEPLOYMENT: EASY

DEPLOYMENT OF APPLICATIONS

WINDEV Mobile allows you to deploy your applications according to the 3 methods proposed by Apple: :
• AppStore
• Ad Hoc distribution
• In-House Distribution.

The distribution of an application via the AppStore depends on approval from Apple (your application must go through and pass a validation process).

An application distributed via the AppStore is visible and accessible by the public.

"Ad Hoc" and "In-House" type distributions (see below) let you distribute applications without having to validate them with Apple, and without having to share them publicly.

Your professional applications are protected this way from any unwanted publicity, and from download by third-parties.

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

"AD HOC" DEPLOYMENT

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.

"IN-HOUSE" DEPLOYMENT

The "In-house" deployment mode remove the constraints on the maximum number of devices: the application can be deployed on as many devices as you want.

This type of deployment also removes the constraints of the physical installation. The deployment is performed via a web server, which eliminates manual operations on each device.

The application does not need to go through Apple's validation process.

This type of deployment requires acquiring a special license from Apple.

DEPLOYMENT ON THE APPSTORE

Of course, it is possible to deploy via the AppStore, Apple's online store.

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

These 3 deployment methods depend only on Apple and may change at any time. You may need to have a license or a subscription with Apple, or to have special hardware from Apple. These conditions may change. Please visit Apple's web site to check the accuracy of the information and the specific conditions at the time you're reading this information.

AVAILABLE EXAMPLES

AMONG THE 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,
• Attendance,
• RSS reader,
• Password,
• Notes,
• Expense accounts,
• Poker,
• Stocks,
• System,
• Tic Tac Toe,
• FTPClient
• Quiz
• Etc.
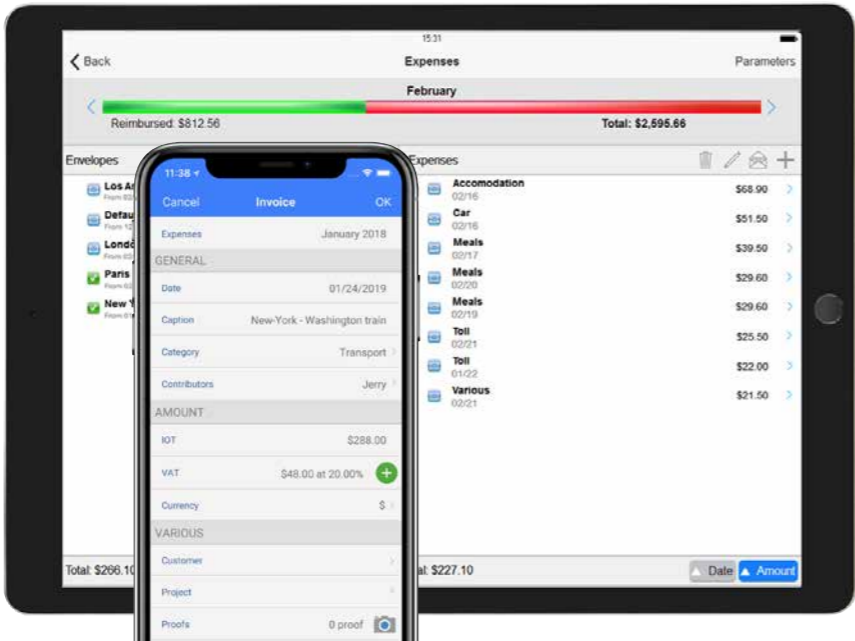
WINDOWS UWP SPECIFIC FEATURES

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

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

The following features are available in addition to the common features.

NATIVE UWP APPS

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

TILE MANAGEMENT

A tile is made of an icon, a background color, and optionally some content.

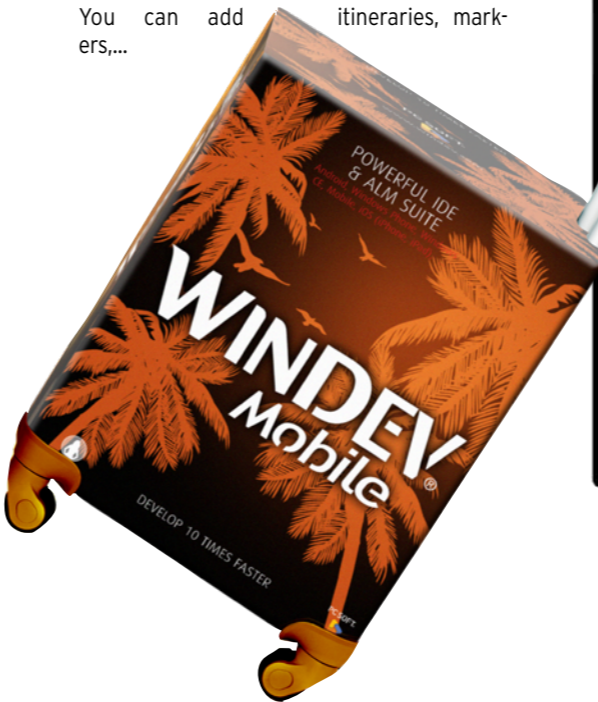You can customize the background color and the icon.

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

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 itineraries, 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.

WINDOWS STORE

UWP applications developed with WINDEV Mobile are distributed either by direct copy on the device, or via the Windows Store.

For deployment on the store, conditions depend on Microsoft and may change at any time. You may need to have a license or a subscription with Microsoft.
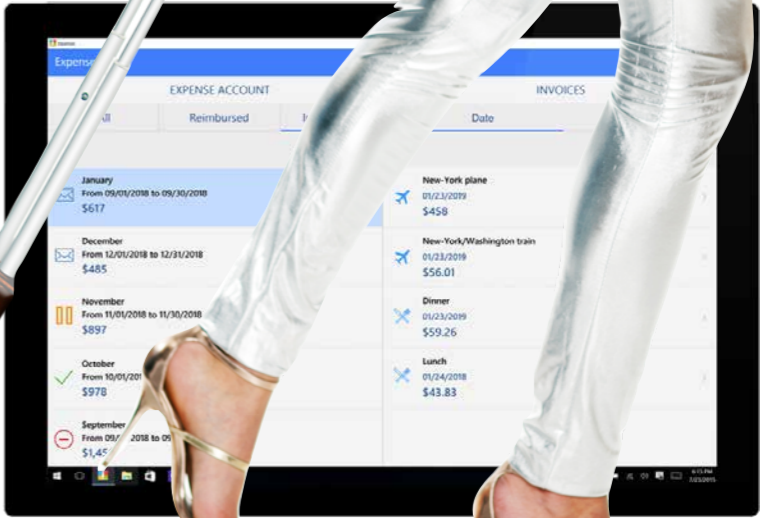
AMONG THE UWP EXAMPLES

Among the examples delivered in UWP you will find:
• Password management
• Note management
• Chrono
• Management of orders
• Quiz

WINDOWS CE SPECIFIC FEATURES

WINDEV MOBILE allows you to create native applications for iPhone, iPad and iPod Touch, Android, Windows UWP, Windows CE, etc.
In addition to the controls and features presented before, WINDEV Mobile offers specific features for **Windows CE**.

These features come in addition to the common features.

WINDOWS CE

Today, applications developed on Windows CE are mainly professional and industrial applications, deployed on specific devices: rugged devices, ...

WINDEV Mobile allows easy development and maintenance of applications designed to run on Windows CE.

WINDOWS CE TO ANDROID

Microsoft has announced the end of Windows CE support.

If you want to switch your industrial applications to Android, note that converting Windows CE applications to Android is incredibly easy with WINDEV Mobile: you keep your windows and your code!

EASY CHARTS

A chart designer is available in CE: you can create charts without having to program.

TAPI ACCESS (TELEPHONY)

Access to TAPI (telephony functions) is done natively via WLanguage: automatically dial a phone number, ...

CALL TO DLL AND .NET ASSEMBLIES

Most suppliers of add-on hardware (GPS, scanner, bar code reader, RFID reader, etc.) provide access drivers for their equipments.

These drivers are provided in the form of native DLLs or sometimes as .Net assemblies. These communication modes via DLL or via a .Net assembly are supported by WINDEV Mobile.

DYNAMIC COMPILATION

Dynamic compilation (execution of code created in an application) is available on WINDEV Mobile.

PRINTED REPORTS

WINDEV Mobile makes it easy to create reports thanks to the report generator included in the environment.

The report is created in the PCL mobile standard format

You can also create reports using the print commands from the **iPrint** family of WLanguage functions.

For printers that do not respect the PCL standard, you can also program the control sequences directly.

PRINTING BAR CODES : ALL!

Printing a bar code from the device can be useful!

WINDEV Mobile allows you to do this directly. The supported bar codes are: UPCA, UPCE, EAN13, EAN8, Interleaved 2 of 5, Codabar, MSI Code, Code 39, Code 93, Code 128, EAN 128, PDF 417, Datamatrix...

RFID

Thanks to WINDEV Mobile, you can easily develop applications that support "RFID" technology.

The application remotely reads and writes information stored on a chip with an integrated antenna. The chip is embedded (or glued) inside an object or on packaging: full traceability!

A reader, a RFID chip model (there are dozens of models)

WHAT LINK TO THE PC?

If a link to a PC must be created, the following modes are available::
• Unidirectional or bidirectional replication (synchronization)
• Infrared link
• Bluetooth
• Wi-Fi
• Cable (ActiveSync on older Windows or controlled application)
• Modem or Internet link
• Telephone (Edge, 3G, 4G...)
• Other methods.

DATABASES

ACCESS TO DATA: LOCAL, REAL-TIME OR REPLICATION

Data is accessed via the Hxxx functions: local (data on the device), or in real time where the device is used (wireless network), or in real time anywhere in the world (3G, 4G, etc.), or by replication, the data is synchronized then (via ActiveSync or via replication).

HFSQL
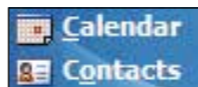
WINDEV Mobile 19 comes with the powerful HFSQL database.

This easily embedded database doesn't require any administration.

AS/400

Native AS/400 access is offered (additional).

CEDB

WINDEV Mobile natively supports "CEDB" files, which are used by a large number of standard applications (Outlook, for example).

Your applications directly read and write in the Calendar, in Outlook, in the Task list...

ACCESS TO THE IS DATABASES.

WINDEV Mobile provides easy access to existing I.S. databases. (Information System). Applications access the current database in real time or via replication.

REPLICATION

WINDEV Mobile lets you synchronize files via "ActiveSync" (old Windows) or via the "Universal replication" mechanism, which allows replication between different databases, for example, HFSQL and Oracle.

CE DEPLOYMENT: EASY

MSI AND CAB SETUP

The generation of mobile applications in CAB and MSI formats is supported.

APPLICATION UPDATE

Applications are automatically updated using a PC connection or a remote connection via ActiveSync (old Windows), 3G, 4G, Internet, Wi-Fi.

TOOLS

SPECIAL TOOLS PROVIDED WITH THE PRODUCT

In addition to the common tools (supplied with WINDEV), WINDEV Mobile comes with tools for Windows CE, which are useful during the development, fine-tuning and presentation phases.

WDEXPLORER is a tool for viewing a mobile device's files and directories from a PC.

WDCEDB allows you to view and access the data found in the CEDB files (.cdb) of a mobile device: appointments, contacts...

WDCapture allows you to capture screen shots or videos of what is displayed on the mobile device connected to the PC.

WDRegistry allows you to easily view the content of a mobile device's registry.

COMPONENTS AND EXAMPLES SUPPLIED

Since Windows CE is a relatively old operating system, many examples and components are provided to facilitate the use of devices that run on this system.

AMONG THE PROVIDED COMPONENTS :

Signature
Allows you to easily include a ready-to-use "Signature" control in your WINDEV Mobile applications.

Time limit
This example explains how to implement a time limit, as well as a system for enabling the software.

GPS
Used to interrogate a GPS to retrieve a longitude, a latitude, a speed, an altitude.

Specific : Falcon, Motorola, Pidion, Opticon, Datalogic, Paxar, Intermec
To access features specific to each of these models.

GANTT
Displays a GANTT chart.

Login Management
Manages the identification in an application from a login and a password.

PC Directory Picker
Selects a directory from a WINDEV application.

THE PROVIDED EXAMPLES

.Net
Use example for a .Net assembly (here to list the Wi-Fi networks).

Contact management
Contact management.

Order management
Simplified management of orders/invoices.

Inventory
Inventory management.

Attendance
Attendance manager: keeps track of attendance for a seminar.

Sending SMS

Virtual Keyboard

Map
Light version of the WDMap tool. Allows you to view and modify data tables in HFSQL Mobile format directly on a device.

PC CDB Browser
Access to standard databases (.cdb).

Expense Accounts
Manages business expenses.

FTPClient
This example shows the content on an FTP server. It can also be used to download files.

Using sockets
These examples present the functions for managing the sockets.

Poll
Creates and conducts polls.

Loan
Simulation of loans, corresponding amortization tables.

Financial functions
Use of financial functions.

Stocks
These examples are used to manage the stocks. You have the ability to synchronize the data entered on a device and in a PC.
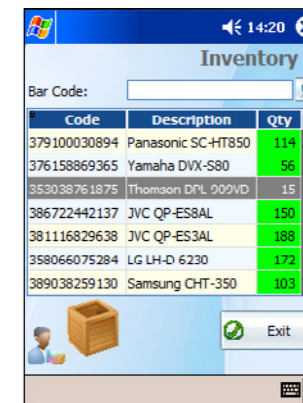
Password
Example for a "box" of passwords.

Tasks
Lets you enter a list of tasks with priority management, due date, automatic reminder

MIME extraction This example is used to extract attachments from an email.

Slide show & Photo album

Image viewer for device. Lets you view, import and/or export a device's photos from/to a PC.

Pool of threads
This example presents the use of threads. (parallel processes).

Telephony
Telephony application usable with a device with phone capabilities.

Notes
This example is used to draw graphic "notes" and save them with keywords.

Managing purchase lists
These examples are used to manage a list of stores, departments, products and purchases.

Beach Booking
These examples are used to manage the bookings for private beaches.

Stopwatch
Visual digital stopwatch.

APN
This example manages the device's camera.

These examples and components are provided with their source code.

You can freely use these examples in your applications, or analyze their architecture!

DATABASES: FOR ALL SYSTEMS

HFSQL: THE RELIABLE, QUICK, EASY & FREE DBMS

HFSQL®

WINDEV Mobile comes with the powerful HFSQL database.

Distribution of HFSQL is free.

HFSQL CLASSIC: EMBEDDED

The HFSQL database can be installed directly on the device.

Your applications benefit from HFSQL's power.

HFSQL runs on Android, iOS, Windows 10 UWP, Windows CE, as well as Windows and Linux.

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 bits or 32 bits, via Wi-Fi, network, Internet, 3G or 4G...

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.

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

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

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

DATA STRUCTURE DESCRIPTION

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

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

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.

RESUME CONNECTION

The reconnection feature after an unexpected drop (Wi-Fi, 3G or 4G drop) is automatic.

The disconnected application reconnects with all the database contexts 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, and a great comfort for users.

COMPLETE BINARY COMPAT-IBILITY 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.

The tables (data and index files) can easily be shared or exchanged with the back office for instance.

MOBILE REPLICATION

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

This feature allows mobile devices to embed and update data, without a permanent con-nection.

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

REPLICATION

Since there is not guarantee that a 3G or 4G connection will be available at the very back of a building, nor a Wi-Fi access point, the application uses the embedded database found on the tablet.

Once the sales person is done, back to his car for instance, he can start a replication with the enterprise database.

SQLITE: NATIVE ACCESS

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

You can also access these files from a PC, to synchronize data for instance.

WINDEV and WEBDEV also offer native access to SQLite, which allows easy data synchronization

HOSTING YOUR DATA IN THE CLOUD

PCSCloud®

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).

This way the data is always accessible, with-out having to worry about the software or hardware infrastructure.

Just imagine, 512 Giga Bytes on a memory card. Now you can easily and at little cost embed large size databases (encrypted if needed) onto your devices, tab-lets, mobiles and phones.

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

COMMUNICATION WITH MOBILES

And other data-bases via Web services

DISTANT

CONNECTION (WIFI, MOBILE NETWORK, USB, ...)

EMBEDDED

Socket
Photo album
Contact
Call
Schedule
HFSQL Client/Server
AS/400
HFSQL and SQLITE
SMS
Text file
Document
Webservice (SOAP/Rest)
FTP
Email
WEBDEV server

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	●	●/●	●	●	●	●	●/●	●/●	●/●	●	●/●
Win CE	●	●/●	●	●	●/●	●	●/●	●/●	●/●	●	●/●

● Access by Web server

● Native access

With WINDEV Mobile, you access your mobile device's resources natively and easily. Your applications totally integrates with your existing code (IS, database, web services, email, ...). Thanks to WINDEV Mobile, your mobile device becomes an intelligent peripheral of your IS.

NATIVE COMPATIBILITY WINDEV / WINDEV Mobile

YOU HAVE EXISTING WINDEV CODE?

MOVE IT OVER TO MOBILE IN A FEW HOURS!

WINDEV applications come over to the mobile side quickly: resize windows to adapt them to mobile screens, enlarge the buttons so that they become more touchscreen-friendly, delete the processes that are not needed on mobile, make little adjustments in your code, and voilà!, you now have a great mobile application!

A wizard analyzes your existing WINDEV elements, and indicates the code to modify or delete.

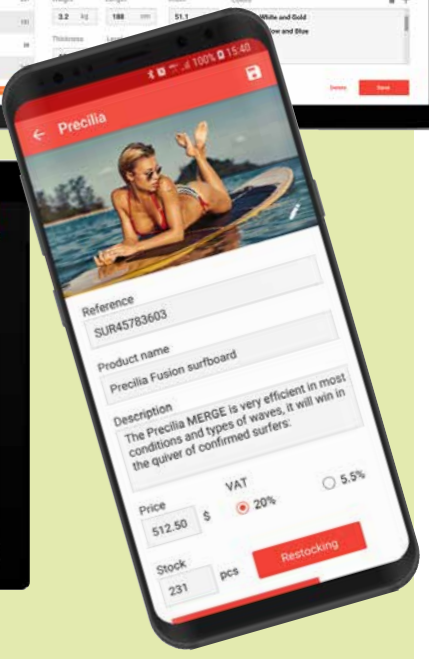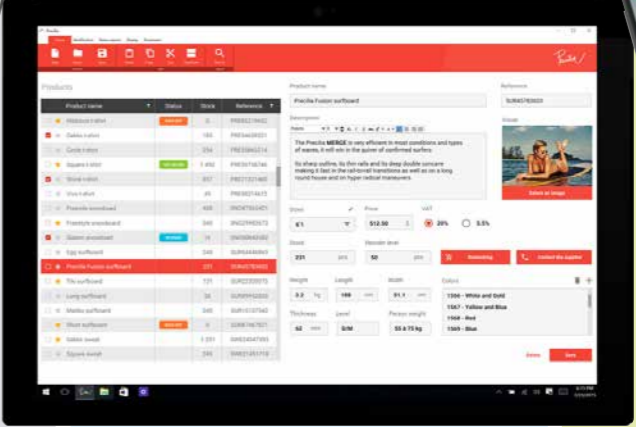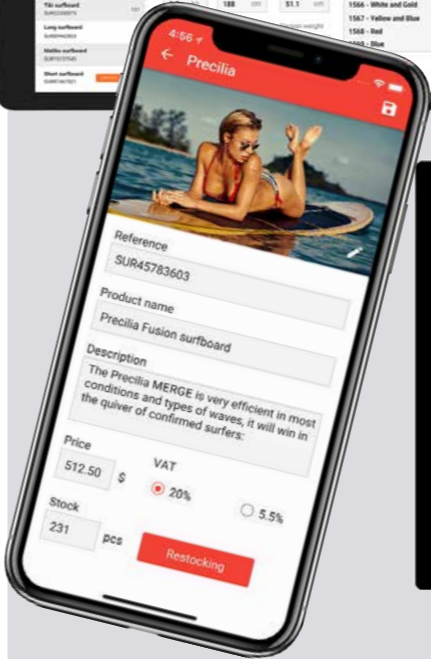Project portability allows you to have high-performance mobile applications in record time.
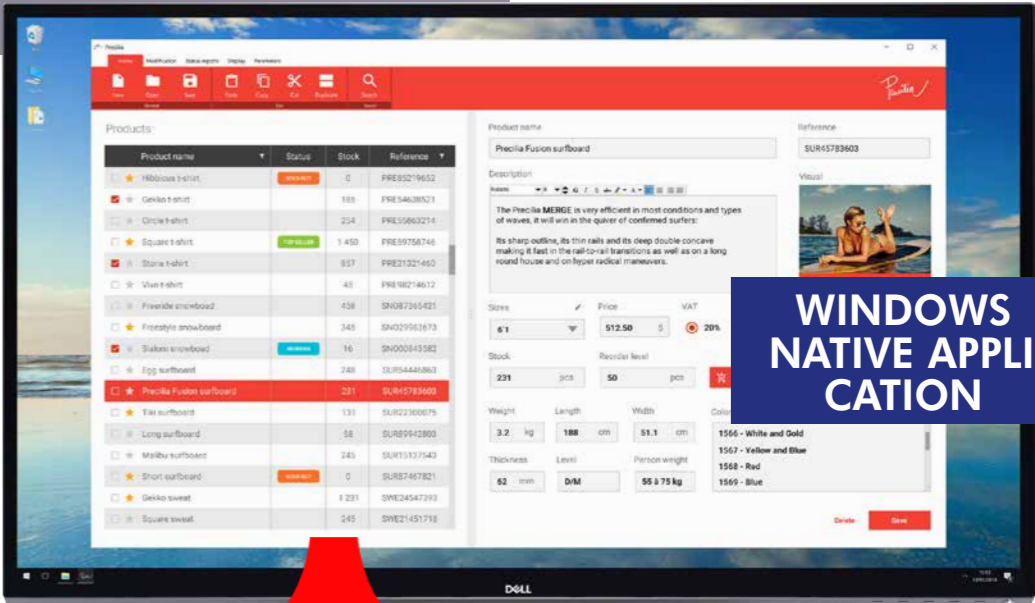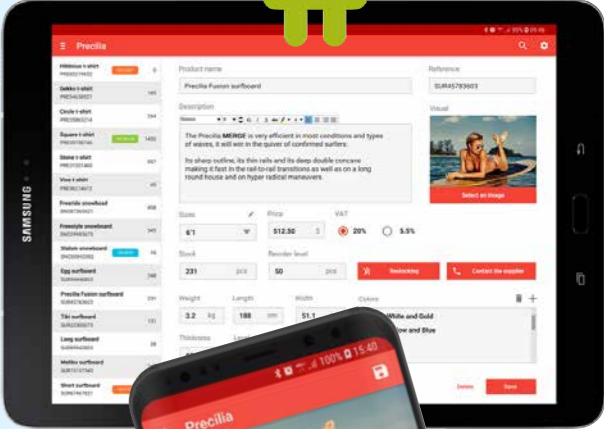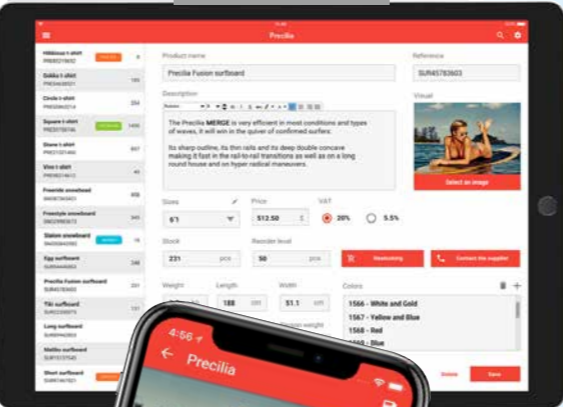

WINDOWS NATIVE APPLI-CATION

NATIVE iOS

NATIVE

NATIVE

EVERYTHING IS NATIVE, WHICH MEANS POWERFUL, AND BATTERY EFFICIENT

With WINDEV your project 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, Windows 10 UWP, and even Windows CE?

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 Windows 10 UWP applications.

What is the main advantage of WINDEV Mobile?

First of all, the fact that you can create a mobile application with such ease is a phenomenal advantage!
The portability of the code, windows, classes, data, etc. is another unmatched benefit.

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 being developed can be tested at any time using the simulator.

How is it possible that Technical Support on WINDEV Mobile is free?

PC SOFT has confidence in the ease of development with its software, and therefore offers Free Technical Support on WINDEV Mobile. Fifteen inquiries (by email) are offered*.

Is there a rich community around WINDEV Mobile?

Yes, you ask your questions and share the experience of the professional developer community on a professional forum.

How long will it take me to get trained?

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 "paper" 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 used for the printing. The FSC label was created by the FSC NGO, which 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, 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

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, work site location, catalog, wine list, telephony, address directory, plot management, medication list, ideal weight calculation, car check, interactive rescuer, ...

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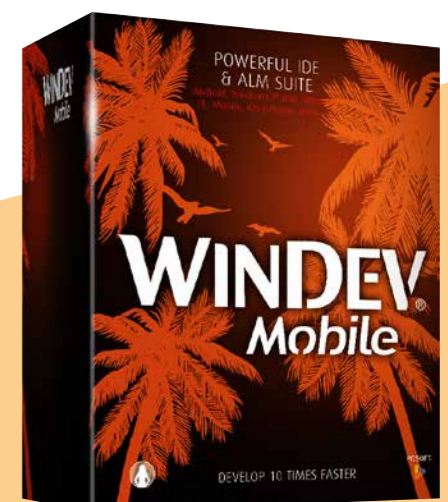
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