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DEVELOP 10 TIMES FASTER

How to discover WINDEV Mobile?

WINDEV Mobile is a powerful Integrated Development Environment used to develop applications for Android, iPhone, iPad and Universal Windows 10 (phone, tablets and PC). It includes all the tools required to design and develop applications.

To quickly and efficiently learn how to use **WINDEV Mobile**, it is recommended to follow these steps:

- 1** Read the “Concepts” (online or on physical documentation).
This guide presents the main concepts required for creating a WINDEV Mobile application.
- 2** “Tutorial” (online tutorial + exercises).
The tutorial provides a first “practical” approach to WINDEV Mobile. It allows you to familiarize yourself with the main editors of WINDEV Mobile.
- 3** Try the examples.
Try the different examples supplied with WINDEV Mobile in the fields you are interested in.

The online help, available at <http://doc.windev.com> or installed locally with WINDEV Mobile, allows you to quickly find the syntax of a WLanguage function, get help about the interface, etc. For each programming theme, you will find a description of the associated feature and the list of the corresponding WLanguage functions.

Remark: If there is a difference between the tutorials and the online help, follow the instructions in the online help.

We hope you enjoy getting started with WINDEV Mobile.

Remember to visit the download section of www.windev.com on a regular basis to check whether upgraded versions are available.

Email address of our Free Technical Support: freetechnicalsupport@windev.com.

This documentation is not contractually binding. Modifications may have been made to the software since this guide was published. Please check the [online help](#).

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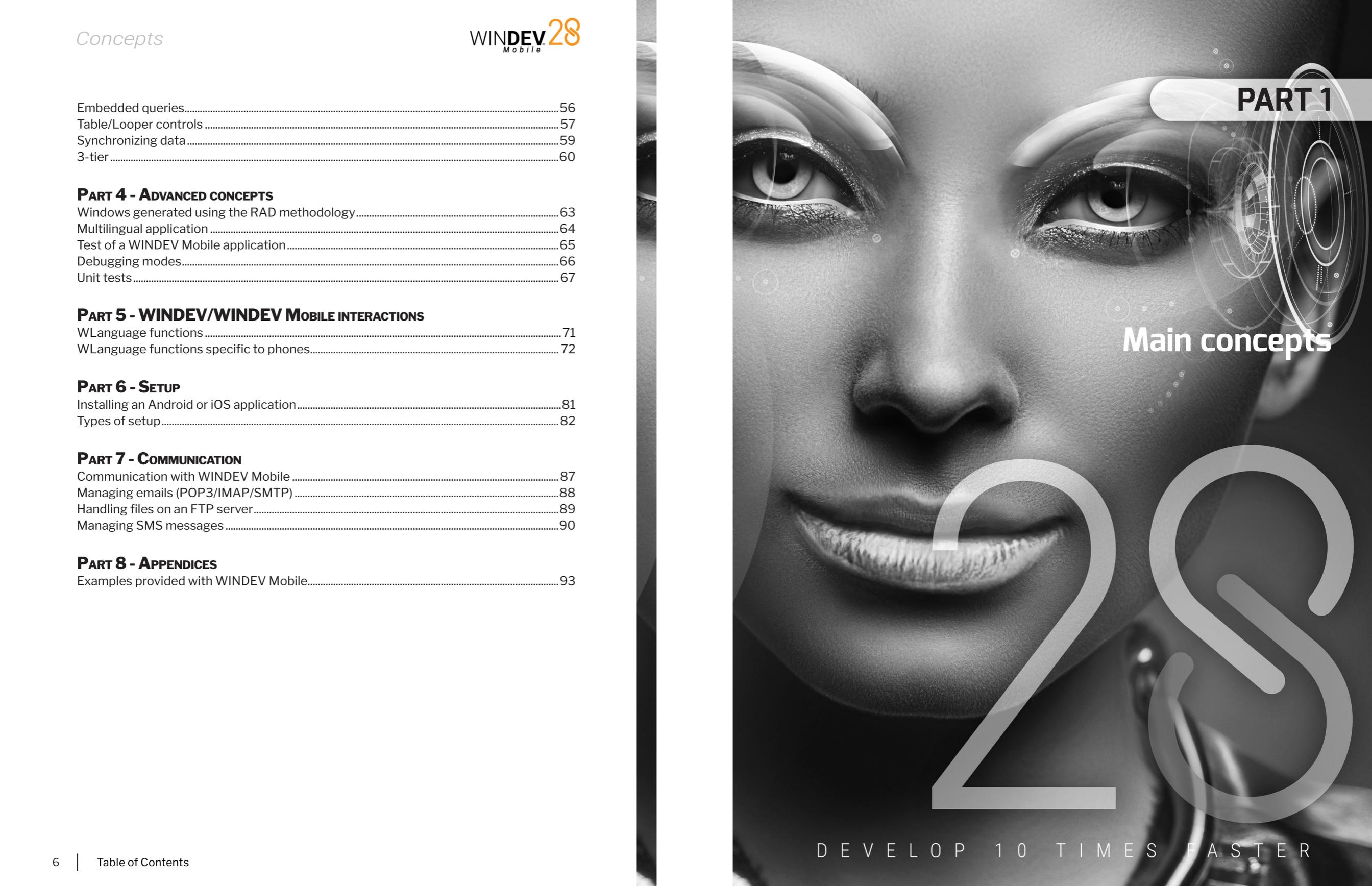
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PART 1

Main concepts

Project and analysis

The development of a mobile **Application** (Android, iOS, etc.) with WINDEV Mobile is based on two main elements: the Project and the Analysis.

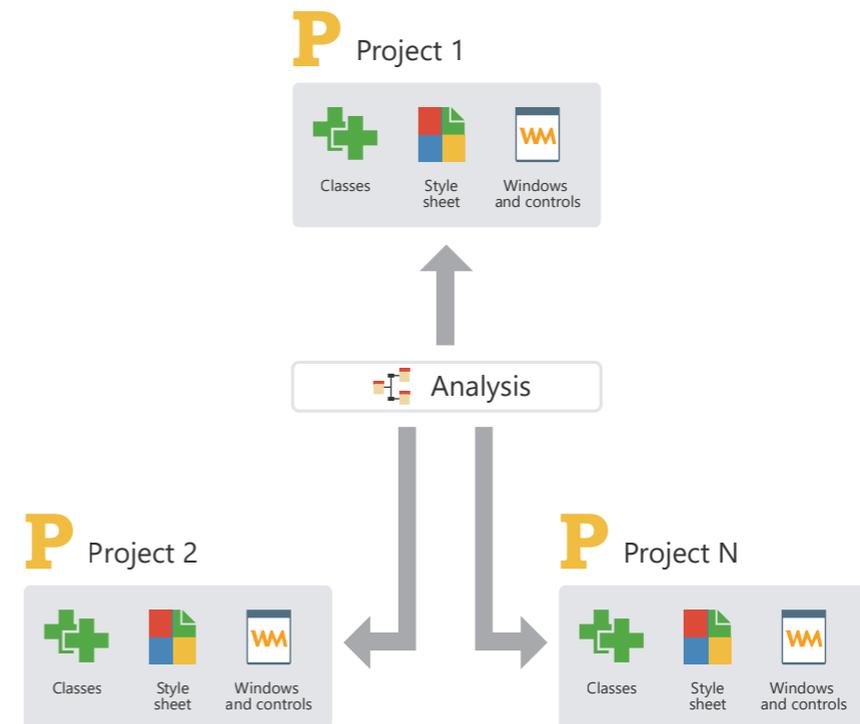
A **WINDEV Mobile project** is a set of elements (windows, controls, classes, components, etc.) which put together, make it possible to create an application.

A **WINDEV Mobile Analysis** is a diagram of the data used by the application. The analysis contains the different data files (tables) used by the application.

An application is built from a project.

In most cases, a project is associated with an analysis.

An analysis can be associated with one or more projects.



Application development cycle

WINDEV Mobile covers the entire application development cycle:



Details of the different phases:

Design phase: An application can be designed from specific requirements, a UML modeling of the processes or even from existing data files.

Development phase: The project and the analysis are created via specific wizards. The application can be developed in RAD (Rapid Application Development) mode, with automatic code and interface generation; or it can result from manually creating multiple project elements.

Test and generation phase: WINDEV Mobile includes several automated test tools to build reliable applications and make sure there are no regressions between the development phases.

Deployment phase: There are different methods to deploy a WINDEV Mobile application: to the Mobile device directly, via a download, via Play Store, MarketPlace, App Store or Windows Store. In any case, the HFSQL data files (if any) will be automatically updated based on the changes made to the application.

WINDEV Mobile: Android, iOS, UWP, etc.

WINDEV Mobile applications can run on the following platforms:

- Universal Windows Platform apps.
- Android version 6 and later.
- iOS version 13 and later.

The following processors are supported:

- **ARM and compatible processors** (Strong ARM, XScale, Samsung, Texas Instrument, etc.).
- **ARMv4T and compatible processors** (XScale, etc).

Remark:

Windows Mobile, Windows CE and Windows Embedded are no longer supported by Microsoft, but are still used in the industrial field. To continue developing for Windows Mobile, you must use version 26. Version 28 gives you access to version 26.

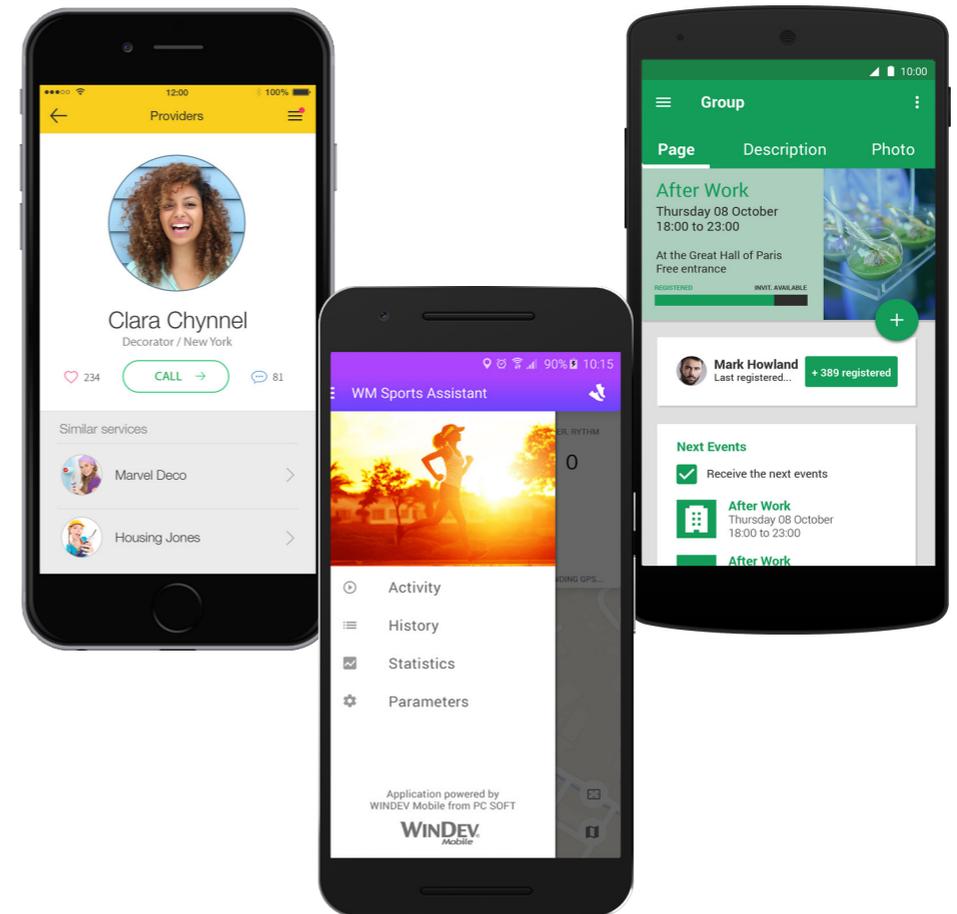
Android, iOS and Mobile windows

The UI (User Interface) of an application is mainly composed of windows.

WINDEV Mobile includes an advanced window editor allowing you to easily and quickly create all possible types of UI, for all types of platforms.

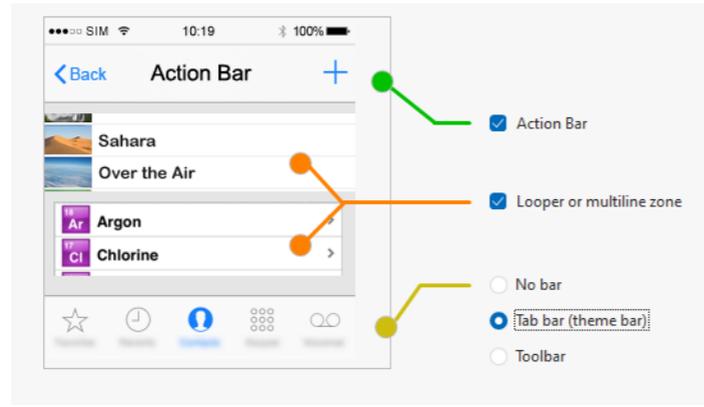
These are some of the features that allow you to get intuitive and user-friendly applications:

- powerful controls.
- anchors to make the UI fit a given screen size. This mechanism is useful in mobile application development because it is used to adapt to different screen resolutions.
- a UI compilation system with error detection (empty titles, untranslated text, overlaps, etc.).



Android and iOS windows: Characteristic

WINDEV Mobile offers the possibility to configure the characteristics of the windows. The available characteristics depend on the platform used. For example:



iPhone/iPad



Android



Managing the display resolution

Windows created with WINDEV Mobile for Android applications automatically adapt to the screen resolution of the devices at runtime.

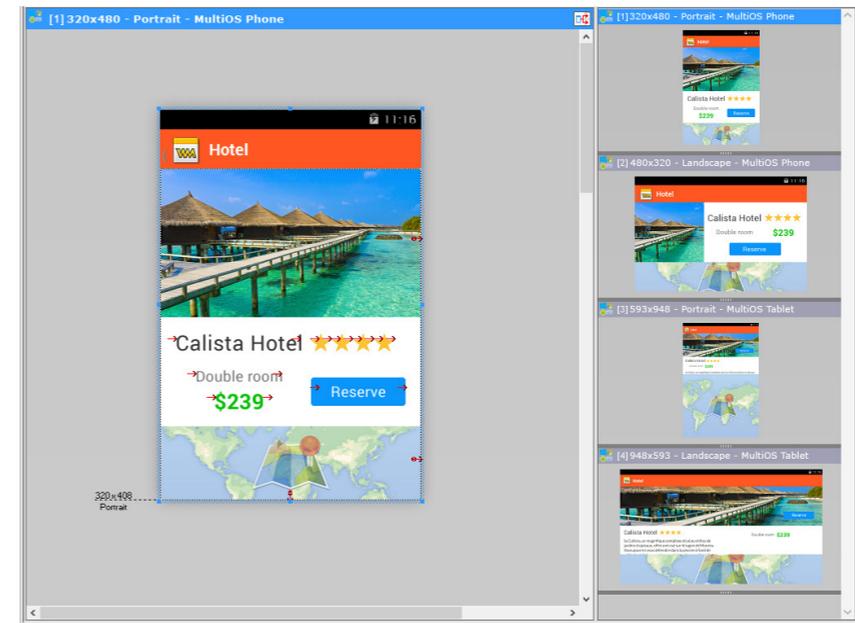
Layouts

Anchors are used to easily change the orientation of a Mobile application or adapt an application from a phone to a tablet.

However, in some cases, the interface must be entirely modified: the position of the controls must be different.

Layouts are used to define several views of a window in the same project without duplicating the window. This allows you to define:

- a specific view for portrait mode,
- a specific view for landscape mode,
- a phone-specific view,
- a tablet-specific view, etc.



To create a layout, on the "Window" tab, in the "Layouts" group, expand "Layouts" and select "Add layouts". The layout creation wizard appears and helps you create the necessary number of layouts. Once the layouts have been created, you can change the position of the controls on one or more layouts in order to get the desired interface.

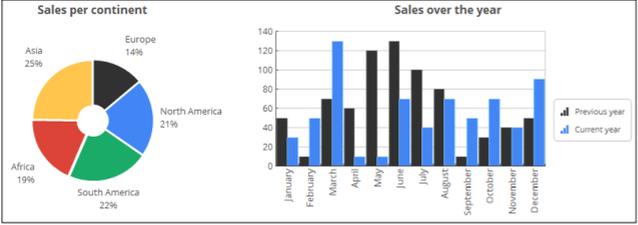
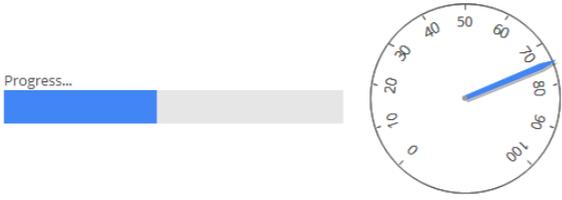
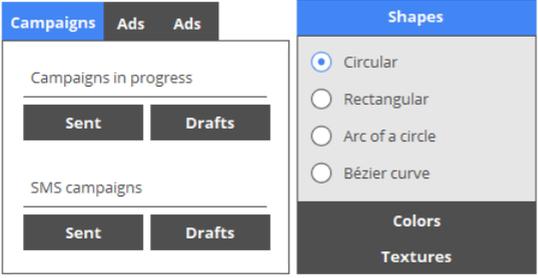
At runtime, the initial layout is automatically selected according to the platform, the orientation and the size of the screen. The layout changes automatically when the device goes from portrait mode to landscape mode, for example.

Available controls in a window

WINDEV Mobile includes several types of controls:

In order to...	Use a control of the following type
Display a text, title, etc. A simple static.	Static
Enter information. Email: <input type="text" value="mike.durand@mail.com"/>	Edit control
Select a value from a list (country, city, currency, etc.). 	Radio Button, Combo Box, List Box
Select several values from a list. 	Check Box, List Box
Select one or more values from a listview (directory with photos, etc.). 	ListView
Display an image (photo, statistics chart, line chart, etc.). 	Image

Display a video or animation. 	Multimedia, Image
Read a PDF file.	PDF Reader
Enter a date in a calendar. 	Calendar
Display data from a file in a table (list of customers, order details, etc.). 	Table with in-memory or direct access data source
Show the same controls multiple times in a window (e.g. product catalog with images, etc.). 	Looper

<p>Display a Column, Line or Pie chart.</p> 	<p>Chart</p>
<p>Display a progress.</p> 	<p>Progress Bar</p>
<p>Program an action in a window (display another window, start a print job, etc.).</p> 	<p>Button</p>
<p>Group the controls by theme and display the themes one by one.</p> 	<p>Tab, Sidebar</p>

Smart controls

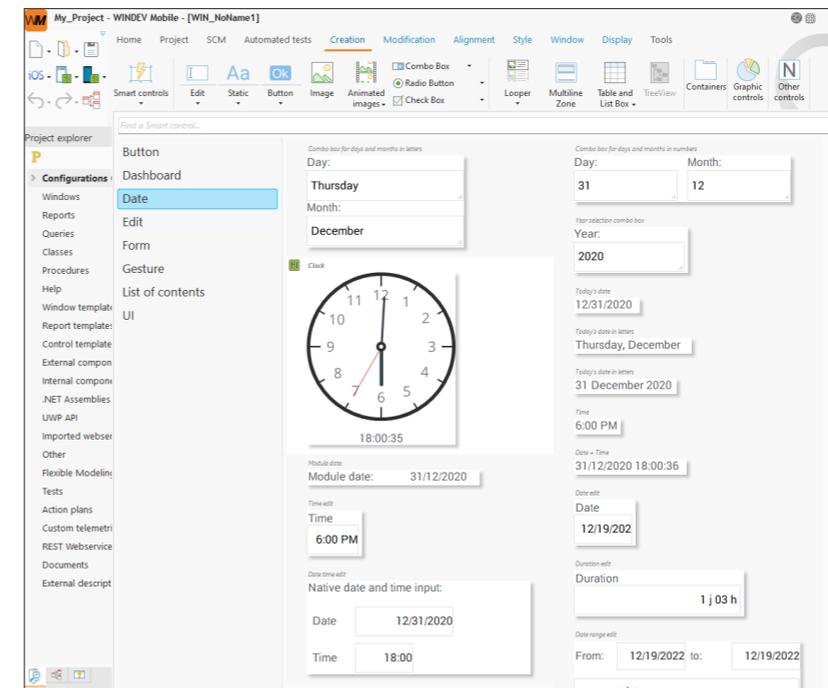
Smart controls are an innovative concept for creating UIs. A Smart control is a ready-to-use control (or group of controls) that includes a "business logic" WLanguage code where necessary.

Smart controls allow implementing sophisticated operations in WINDEV Mobile applications with one click.

WINDEV Mobile includes many Smart controls: Sign In with Apple, Facebook, Camera, PIN input, Finger signature, etc.

To integrate a Smart control in your UI:

1. On the "Creation" tab, in the "Smart" group, click "Smart controls".
2. Select the desired control in the window that appears:



You can:

- Browse through the different types of controls,
- Enter keywords in the search box.

Remark: The "Go" button that appears when hovering over the Smart controls allows you to see and try the control before integrating it in your window.

3. Select the desired control, drag it and drop it onto the window editor.

Application menus

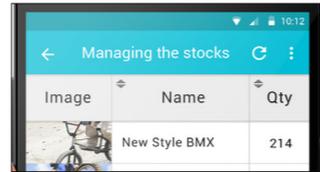


Android/iOS

In Android and iOS, the menus are displayed in the Action Bar. Different buttons correspond to the available actions.



The menus can also be presented in a sliding window.



Internal window

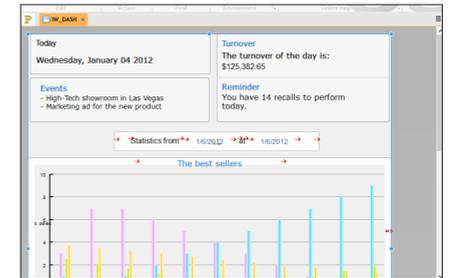
The Internal Window control is used to include a window (and its code) in another window. At runtime, the internal window will be dynamically merged with the host window.

1. Creating an internal window

An internal window can be created via the  icon in the quick access buttons. In the "New" window, click "Window" then "Internal window".

An internal window is a specific window that has no title bar or menu.

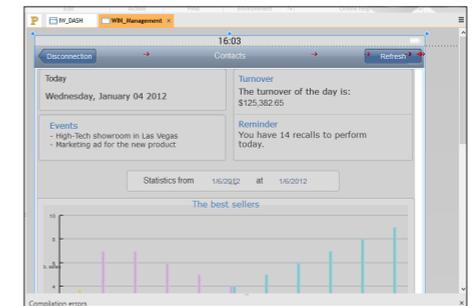
All types of controls can be used in this window.



2. Using an internal window

To use an internal window, you must:

- create an Internal Window control.
- in the control description, select the internal window to use and validate.

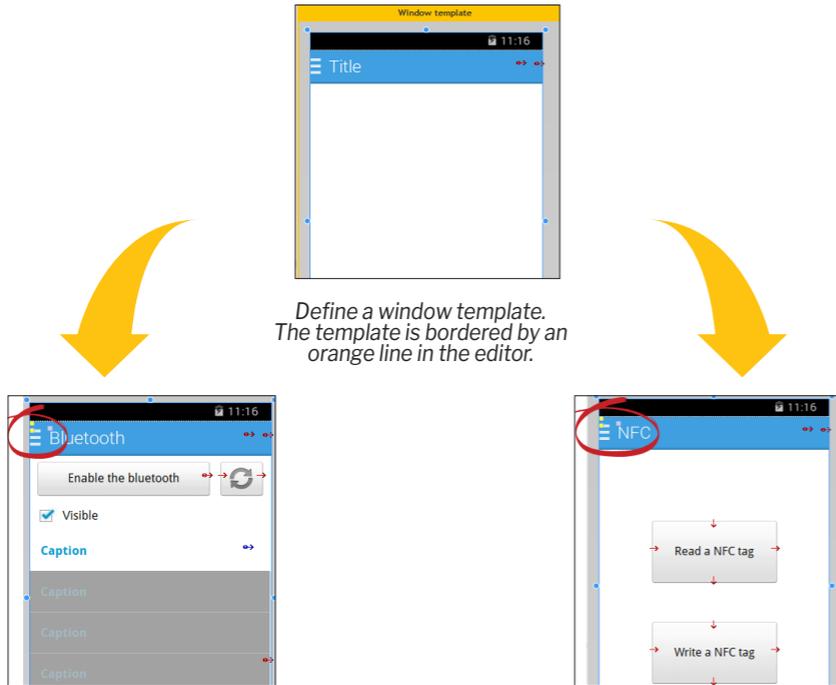


Remarks:

- The internal window used in the "Internal Window" control can be modified through programming.
- Limitations: The host area is rectangular and no override is allowed. To perform overrides, it is recommended to use control templates.

Window templates

WINDEV Mobile allows you to create window templates. These templates contain all the graphic elements common to all the windows of your application. Changes made to a window template are automatically applied to all the windows that use the template. Window templates allow you to keep the style book defined for an application.



Define a window template. The template is bordered by an orange line in the editor.

Template used in several windows. The elements belonging to the template are identified by a yellow square.

A window template can be created:

- via the icon in the quick access buttons. In the "New" window, click "Window", and then "Window template".
- from the current window (on the "Home" tab, in the "General" group, expand "Save" and select "Save as a template").

To create a window based on a template, select the desired template when creating the window.

The characteristics of the elements can be dissociated from the template. For example, dissociate the position of a control from the template to move it elsewhere while keeping other changes (code, style, etc.). This is referred to as **control inheritance**. In this case, the elements are identified by a blue square.

Control templates

WINDEV Mobile allows you to create control templates. A control template is a set of controls that can be re-used in several windows.

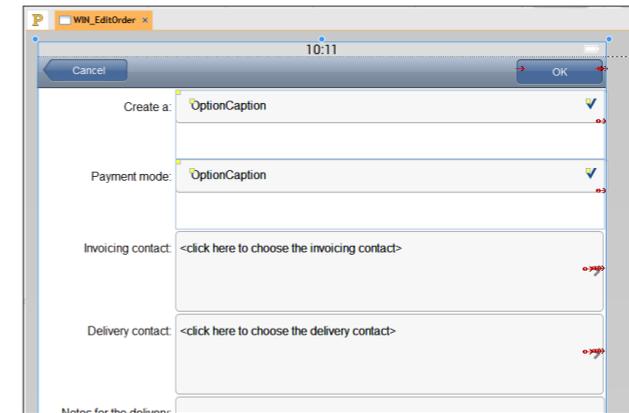
Changes made to a control template are automatically applied to all the windows that use the template.

A control template is used to:

- group a set of controls for a specific purpose.
- make the controls independent of the host window.



View of a control template. The template is bordered by an orange line in the editor.



Template used in a window. Elements from the template have a blue border and are identified by a yellow square.

A control template can be created:

- via the icon in the quick access buttons. In the "New" window, click "Window" then "Control template".
- from the controls in the window (select the controls and right-click, in the context menu that appears, select "Refactoring .. Create a control template from the selection").

To create a window based on a control template, create a "Control template" control.

The characteristics of the elements can be dissociated from the template. For example, dissociate the position of a control from the template to move it elsewhere while keeping other changes (code, style, etc.). This is referred to as **control inheritance**. In this case, the elements are identified by a blue square.

Reports

WINDEV Mobile allows you to easily create and print all types of reports with the report editor.

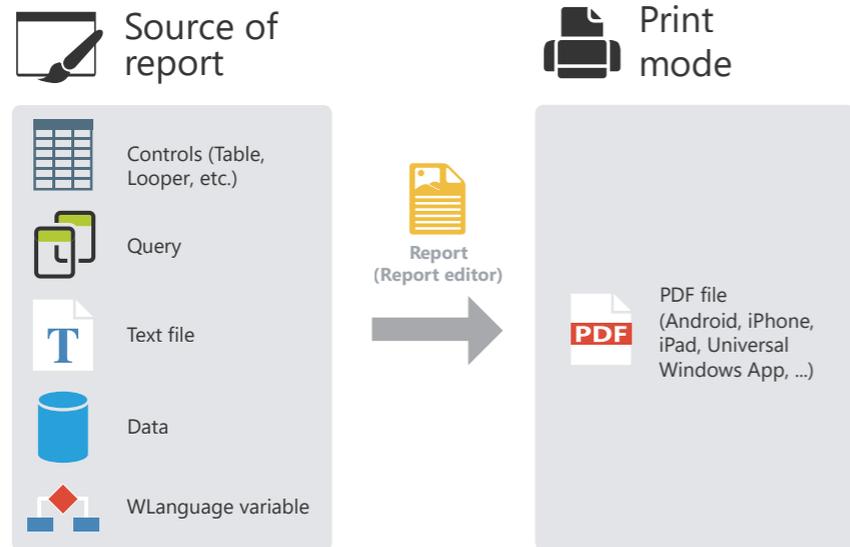
A report can be used to summarize and synthesize data.

You can:

- group data.
- sort data based on different criteria.
- perform calculations (means, statistics, etc.) and create charts.

The diagram below illustrates the concept of reports:

- the data to print comes from a data source (data file described in an analysis, HFSQL view, query, memory area or text file).
- the report groups, sorts and formats the data.
- the report can be executed as a PDF file.



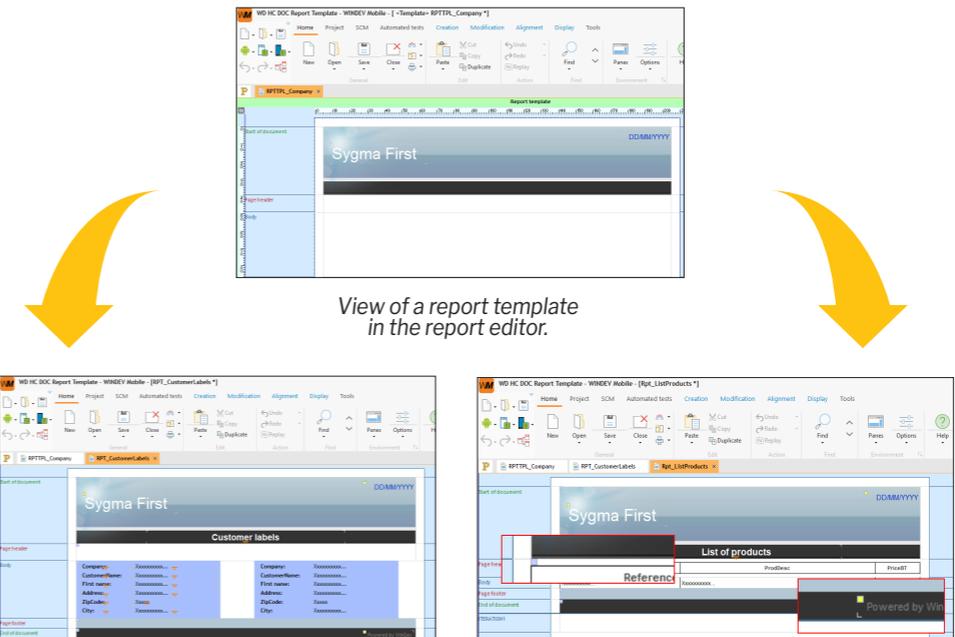
Other print modes

WINDEV Mobile also allows you to print using WLanguage functions (iXXX functions).

Report templates

Most organizations use a standardized appearance and layout for their print jobs: date in the upper-right corner in a specific format, page footer with print time and file name, logo in the upper-left corner, etc.

Report templates are used to easily standardize report layouts.



Template used in different reports.
The elements that belong to the template are identified by a yellow square.
Overridden template elements are identified by a blue square.

A report template can be created:

- via the icon in the quick access buttons. In the "New" window, click "Report", and then "Report template".
- from the current report (on the "Home" tab, in the "General" group, expand "Save" and select "Save as a template").

To create a report based on a template, select the template that will be used when creating the report.

The characteristics of the elements can be dissociated from the template. For example, dissociate the position of a control from the template to move it elsewhere while keeping other changes (code, style, etc.). This is referred to as **inheritance**. In this case, the elements are identified by a blue square.

PART 2

Development
environment

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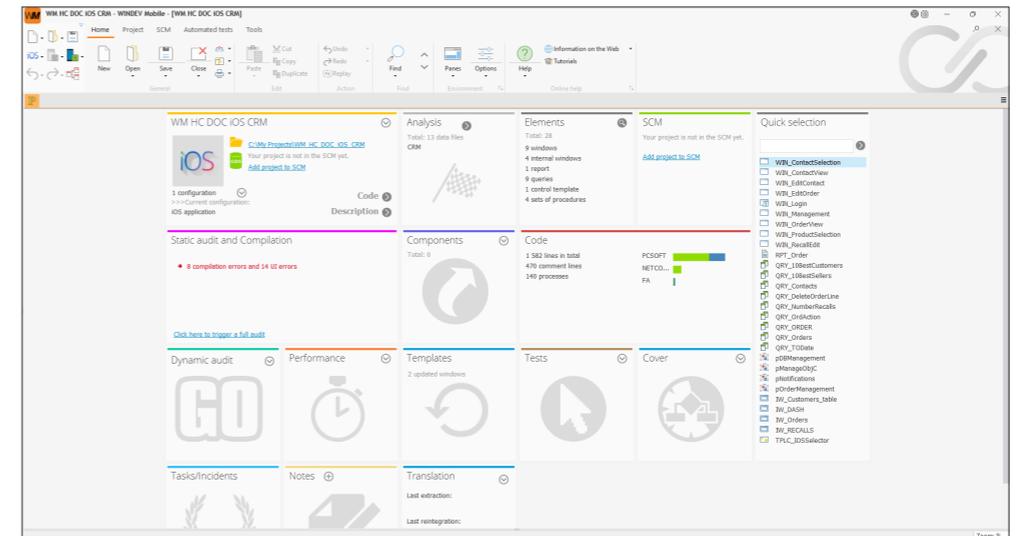
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Project dashboard

The project dashboard is an essential element for managing WINDEV Mobile projects. It shows an overall and detailed view of the project's progress.

The project dashboard includes several indicators about the project content:

- project statistics,
- incidents,
- tasks,
- status of automated tests,
- result of different audits,
- list of elements checked out from the SCM (Source Code Manager),
- result of action plans (continuous integration), etc.



The elements in this dashboard are displayed as widgets. These widgets can be configured, moved, enabled, disabled, etc. You can also add new indicators.

The dashboard configuration is saved for each user. The dashboard configuration is the same for all the projects of a given user.

WINDEV, WEBDEV and WINDEV Mobile: fully compatible format

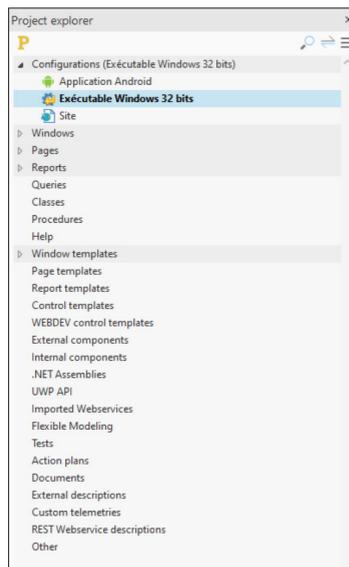
New projects are often cross-platform.

For example, for an ERP system on Windows, it is very likely that beside the main application, there will be sales agents equipped with PDAs or smartphones, stores with mobile devices for inventory management, and Intranet and Internet sites.

All elements, excluding the UI (pages and windows), are 100% compatible and can be shared between WINDEV, WEBDEV and WINDEV Mobile projects.

It is thus possible to share sets of procedures or classes, for example, between several projects.

A project can be opened in any IDE regardless of the one that was used to create it.



When you open a project in a different IDE, a wizard appears, allowing you to create a **project configuration** specific to the IDE used.

For example, if you open a WINDEV project in WEBDEV, you will be able to create a project configuration named "Site", to group all the elements required by the WEBDEV site.

You can also view the elements of each platform from each environment. A project in WINDEV displays the thumbnails of the WEBDEV pages and WINDEV Mobile windows, for example. Clicking a WEBDEV page from the WINDEV project editor opens the WEBDEV page (WEBDEV must be installed on the computer).

Remark: If you have WINDEV and WINDEV Mobile, you can handle WINDEV Mobile configurations from WINDEV. You can open, modify and test mobile windows.

Project configuration

Project configurations allow you to adapt the same project to multiple "targets".

From the same project, you can create:

- applications with different elements, names, etc.
- different external or internal components,
- cross-platform applications.

You can work on a specific configuration at any time: the elements that do not belong to this configuration appear grayed out in the "Project explorer" pane.



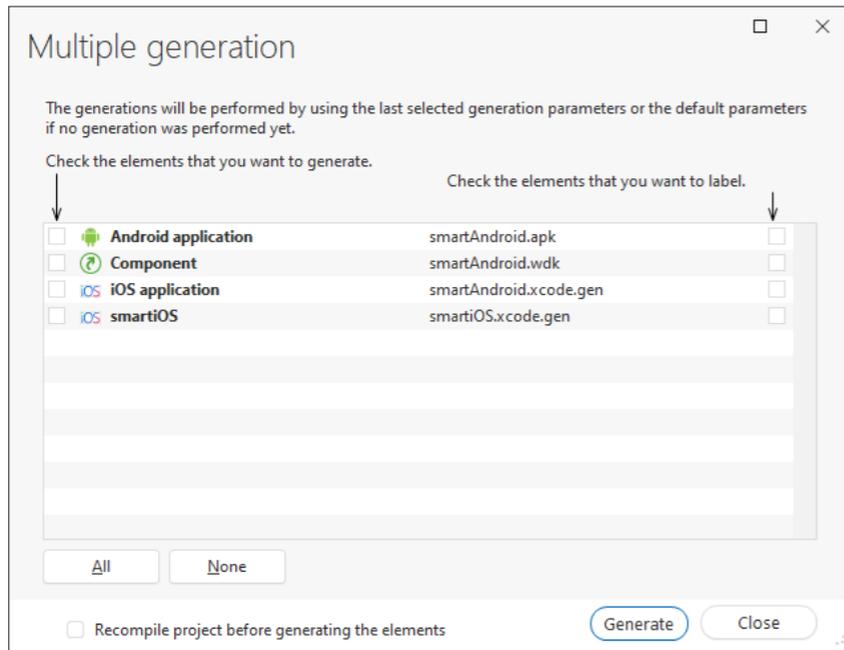
The multiple generation allows you to generate all project configurations (or some of them) in a single operation.

Multiple generation

Project configurations allow you to easily define the "target" platforms of the project. Multiple executables, components and libraries can be defined for the same project.

You can select each configuration individually to generate the corresponding program.

There is a faster method: the **multiple generation**. You can select and generate the desired configurations with one single action.



To start a multiple generation, go to the "Project" tab, "Generation" group and click "Multiple generation".

Custom-Folders: Organize your project

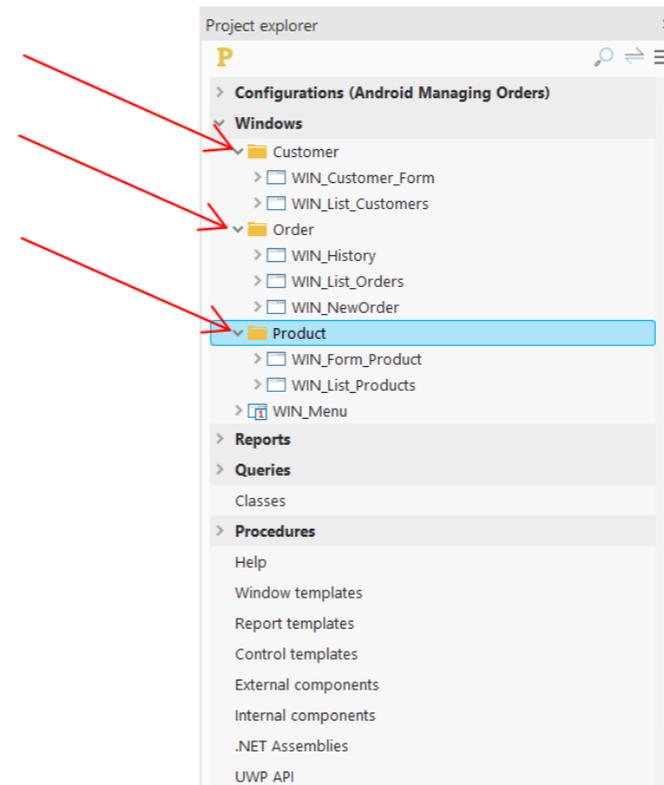
All elements included in a project are listed in the "Project explorer" pane. By default, the elements are organized according to their type: windows, reports, classes, etc.

In large projects, it is often more practical to group the elements that relate to the same feature: stock management or order management for example.

To do so, create the "Custom-Folders" in the tree structure of the "Project explorer" pane and drag the different elements onto these folders.

Some elements can be common to several "Custom-Folders".

It makes it easier to work on part of the application.

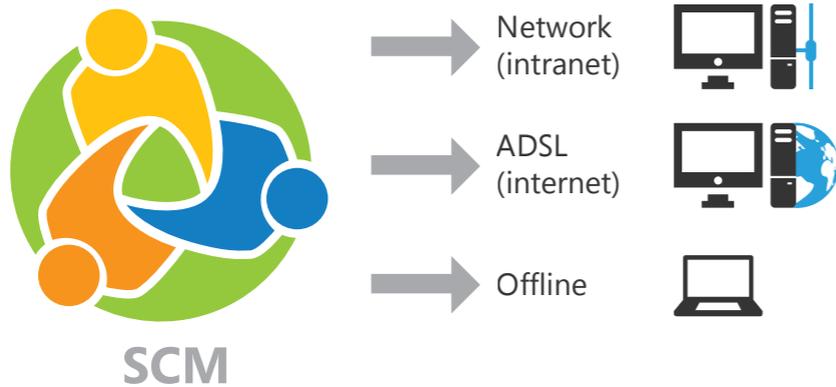


Remark: You can use internal components in WINDEV Mobile to organize your projects and share elements.

Source Code Manager (SCM)

Overview

To simplify teamwork, WINDEV Mobile includes a Source Code Manager. The Source Code Manager allows developers to work together on the same project at the same time and share elements between multiple projects.



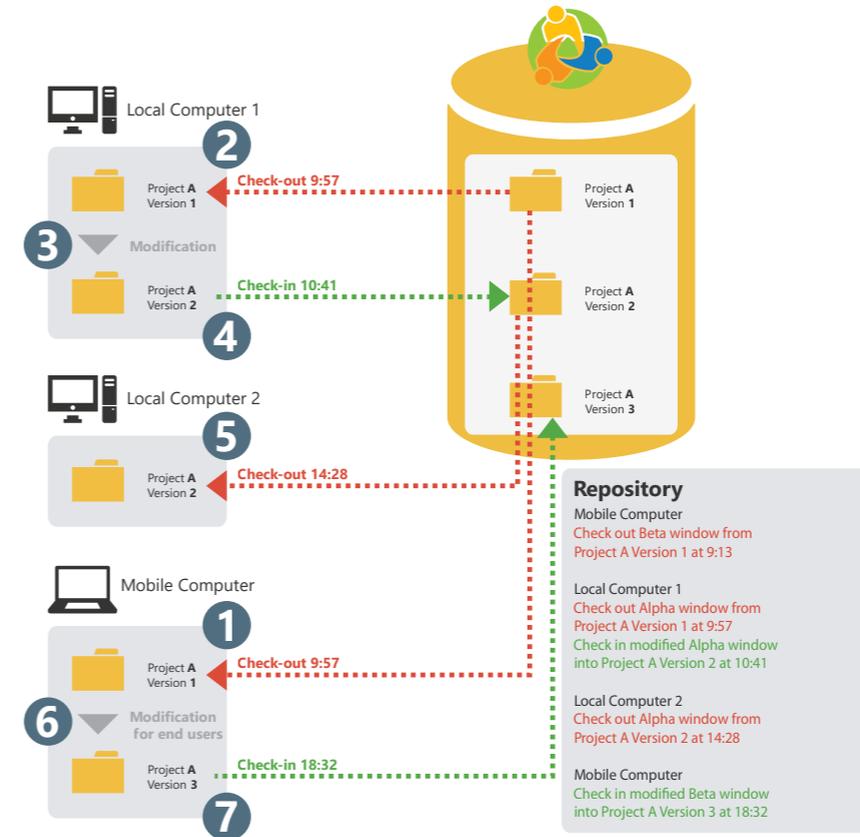
A repository contains a collection of project elements.
Each computer has a local copy of the elements required for development

Elements in the SCM can be shared:

- via PCSCloud (paid turnkey solution, on a dedicated server),
- via SCMDrive (paid turnkey solution, on a shared server).
- via a network,
- via the Internet,
- in offline mode. In this case, the necessary elements will be checked out from the SCM when the laptop is connected to the main system, for example.

Operating mode of the Source Code Manager

The following example presents the Source Code Manager:



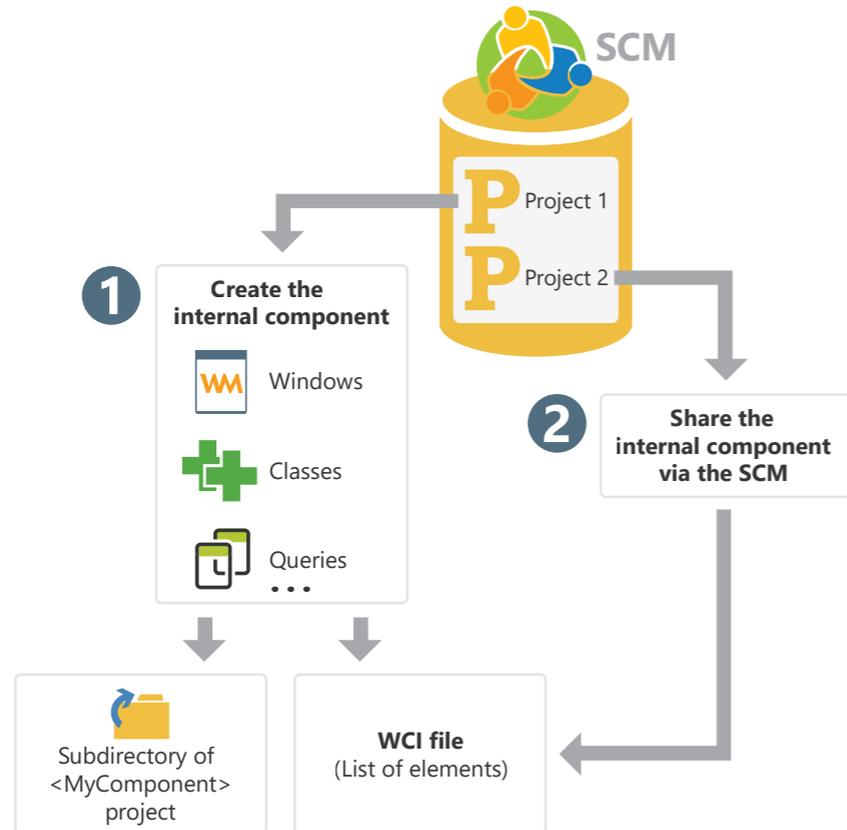
A project element (window, report, etc.) can only be checked out by one developer at a time. Once the checked out elements are modified, they must be checked back in so that the source project can take the changes into account. The repository stores a history of all the project elements since they were created.

Each time an element is checked back in, the version number of the source project is incremented by 1.

Internal component

An internal component is a set of elements from a project. This set is used to:

- Organize a project: you can create internal components to group the elements of a project, by functionality, for example.
- Share elements between multiple projects, via the SCM.



The elements of an internal component can be private or public:

- Private elements can be handled by the other elements of the component.
- Public elements can be handled by the elements of the project that uses the internal component.

External component

An external component is a set of WINDEV Mobile elements: windows, reports, analysis, etc. This set of elements performs a specific operation. For example, an external component can correspond to one of the following actions:

- Sending SMSs,
- Sending emails,
- ...

An external WINDEV Mobile component can be distributed to other WINDEV Mobile developers (for free or at a cost). Developers will be able to easily include the functionalities of the external component in their applications. The external component will be included in the application and distributed with the application.



Generation modes

WINDEV Mobile allows you to generate many other types of projects.



Android applications

WINDEV Mobile allows you to generate applications for Android. These applications can be run on smartphones, tablets and ultra-portable devices that use this operating system (version 5.0 and later). These applications can also be published on Play Store.



iOS applications

WINDEV Mobile allows you to generate applications for iOS (starting with iOS 9). These applications can be run on iPhones and iPads. They can also be published on Apple Store.



Universal Windows 10 App

WINDEV Mobile allows you to generate applications for tablets and phones running on Windows 10. These applications can be started in tile mode on Windows 10 tablets. They can also be published on Windows Store.



SOAP or REST Webservices

A Webservice (also called XML Web service) can be generated from a WINDEV Mobile project. A Webservice uses a set of functions (one or more sets of procedures) and makes them accessible via the web (or a private network) using HTTP, SOAP and REST.

Remark: A Webservice must be deployed to a WEBDEV Application Server to be used.



External components

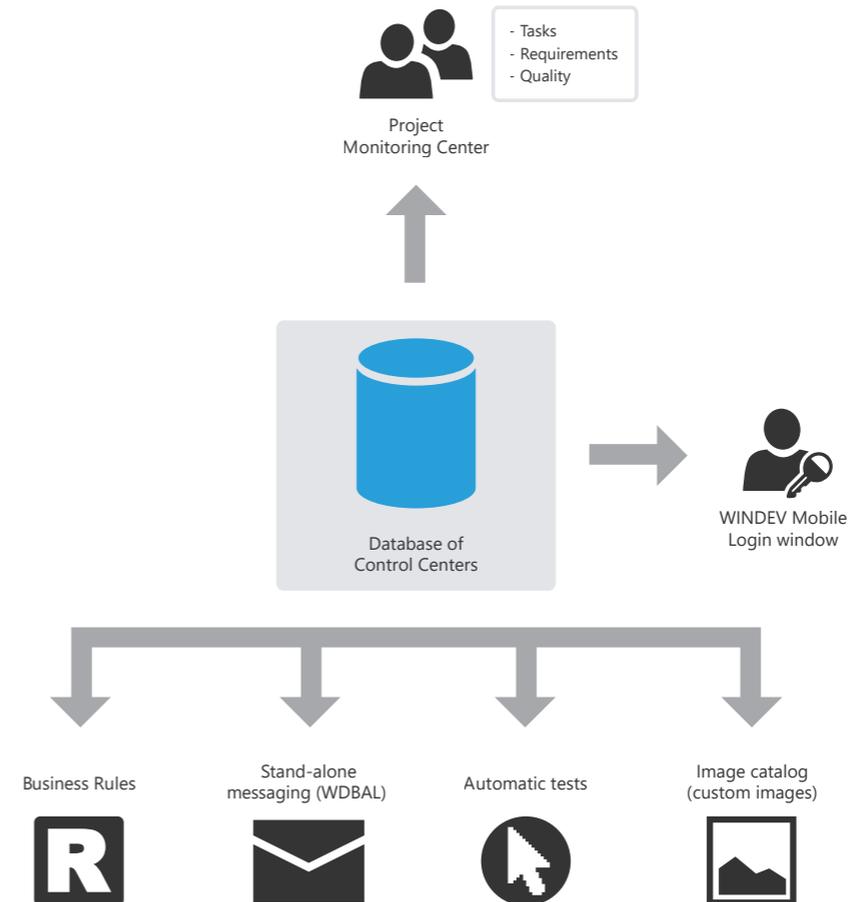
External components are application snippets that allow you to share one or more specific functionalities between multiple applications. A component generated in WINDEV can also be used in a WEBDEV or WINDEV Mobile project.

Project Monitoring Center

WINDEV Mobile includes a Project Monitoring Center to manage development projects. The Project Monitoring Center allows you to:

- Manage project requirements,
- Monitor the progress of a project (schedule tasks),
- Manage bugs and changes made to a project.

The Project Monitoring Center uses an HFSQL Classic or Client/Server database: the Control Center database. This database is shared between different tools available in WINDEV Mobile:



Remark: When installing WINDEV Mobile, the setup program allows you to:

- create the database of the Control Centers (database of the Project Monitoring Center). This database will be automatically created in HFSQL Classic format in the specified directory.
- share an existing database of the Control Centers.

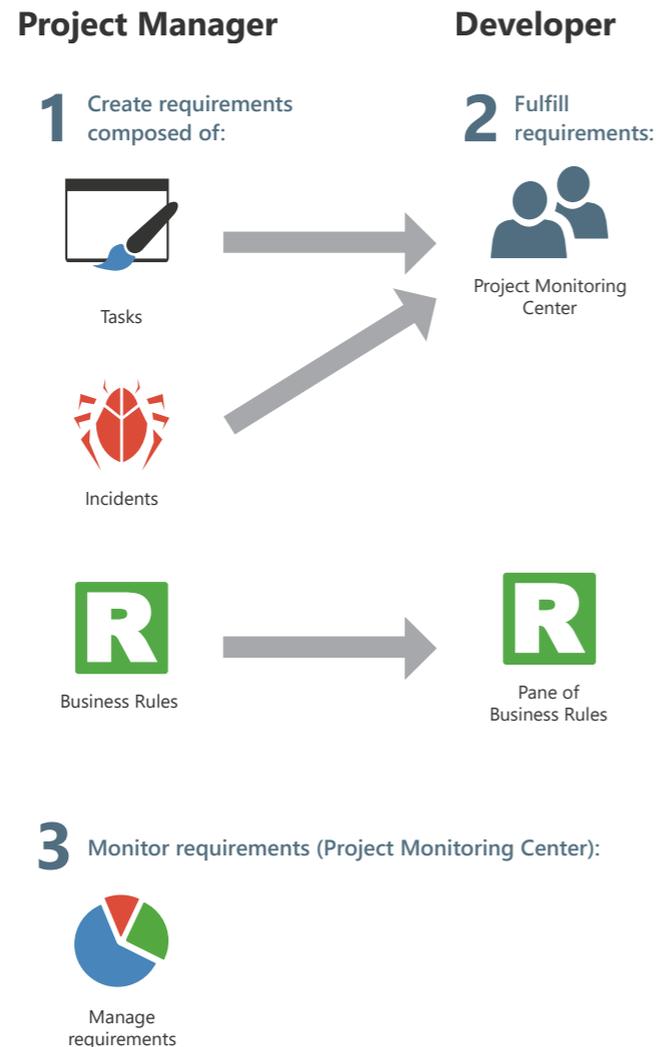
Managing requirements

The Project Monitoring Center allows the project manager to manage a development project. To do so, you must:

- define the different project contributors.
- define the requirements (and the associated elements).

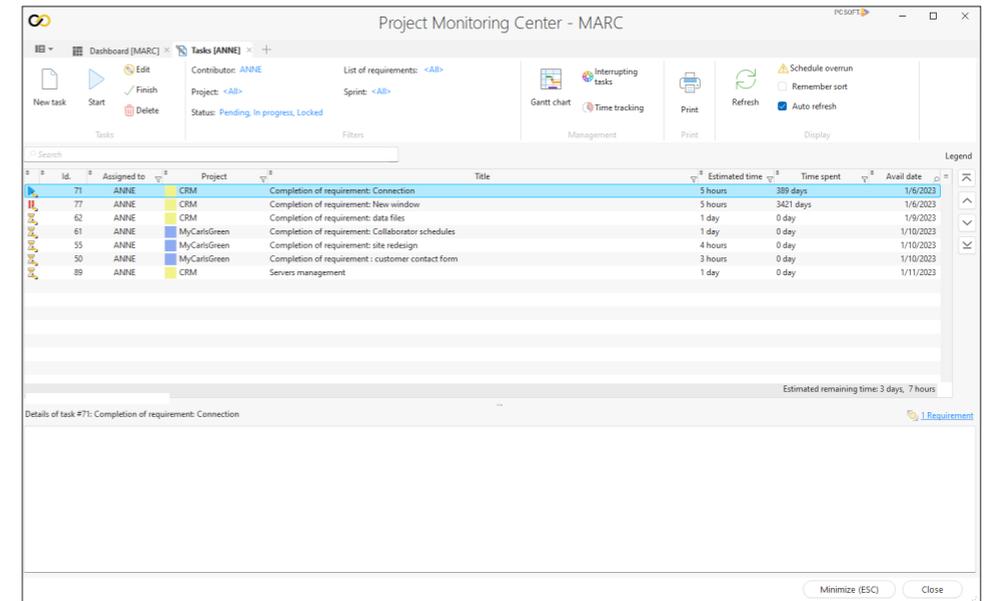
Each developer performs the different tasks assigned to them.

The project manager can follow the progress status of the project at any time.



Managing tasks

The Project Monitoring Center allows the project contributors to manage their task schedule. These tasks can be linked to certain requirements and correspond to multiple projects.



Once the project tasks have been defined, you can follow their progress in the Project Monitoring Center. The time spent on a task is calculated automatically, it does not require any specific action and does not generate any particular constraints.

When the relevant project is opened, the Project Monitoring Center requests or indicates the current task. As soon as a task is completed, simply indicate that the task is finished and specify the new task.

A task can be linked to a project element (window, report, etc.). When the element is opened, the time spent on it is counted and stored in the Project Monitoring Center. Conversely, the element that corresponds to the desired task can be automatically opened from the task list.

Each developer can also see their own task list in the "Project Monitoring Center" pane in the editor.

Managing business rules

WINDEV Mobile allows you to manage business rules. A business rule is used to define a specific operating mode or particular process. For example: the calculation of a specific VAT rate, the rules for changing the status of a customer, the formula for calculating shipping costs, a commercial commission, a discount rate, a decay coefficient, etc.

A business rule can be simple or complex.

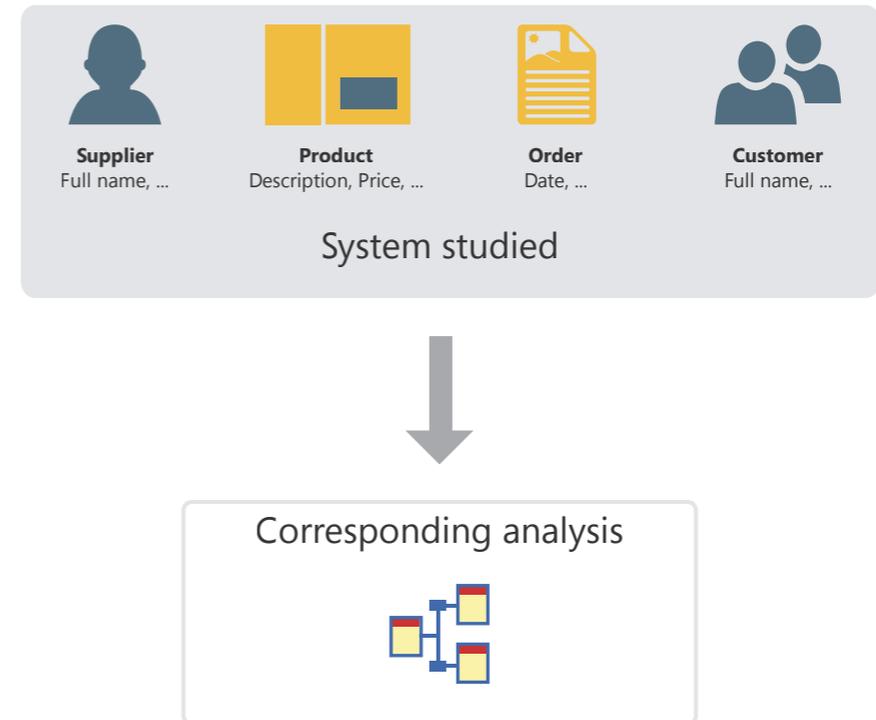
Business rules can come from specifications (corresponding to requirements).



Analysis: database structure

When a WINDEV, WEBDEV or WINDEV Mobile project uses data files, it must be associated with an analysis. An analysis is used to describe the data structures (data files, items, etc.) used in your project.

The data model editor allows you to easily create an analysis.

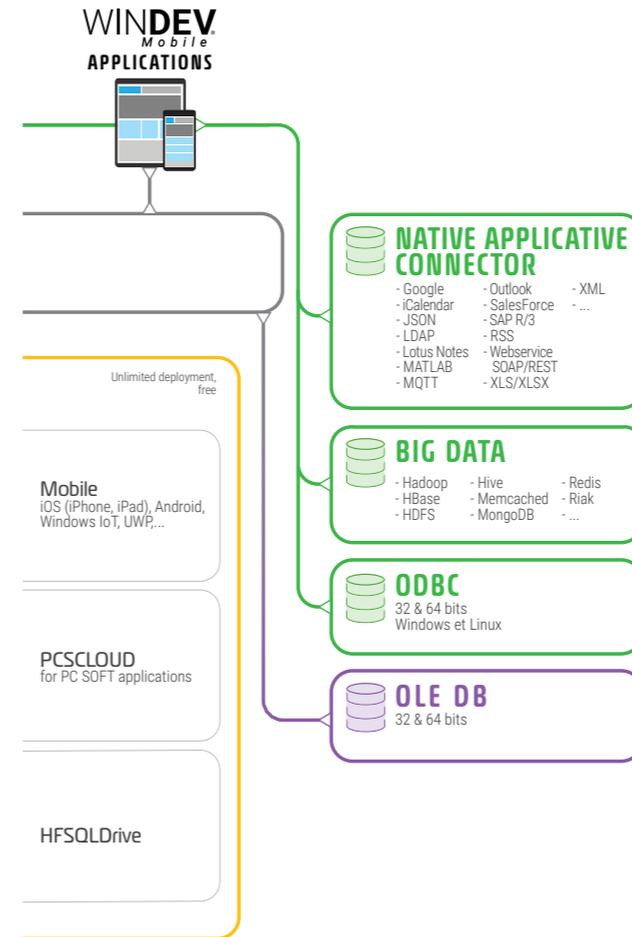
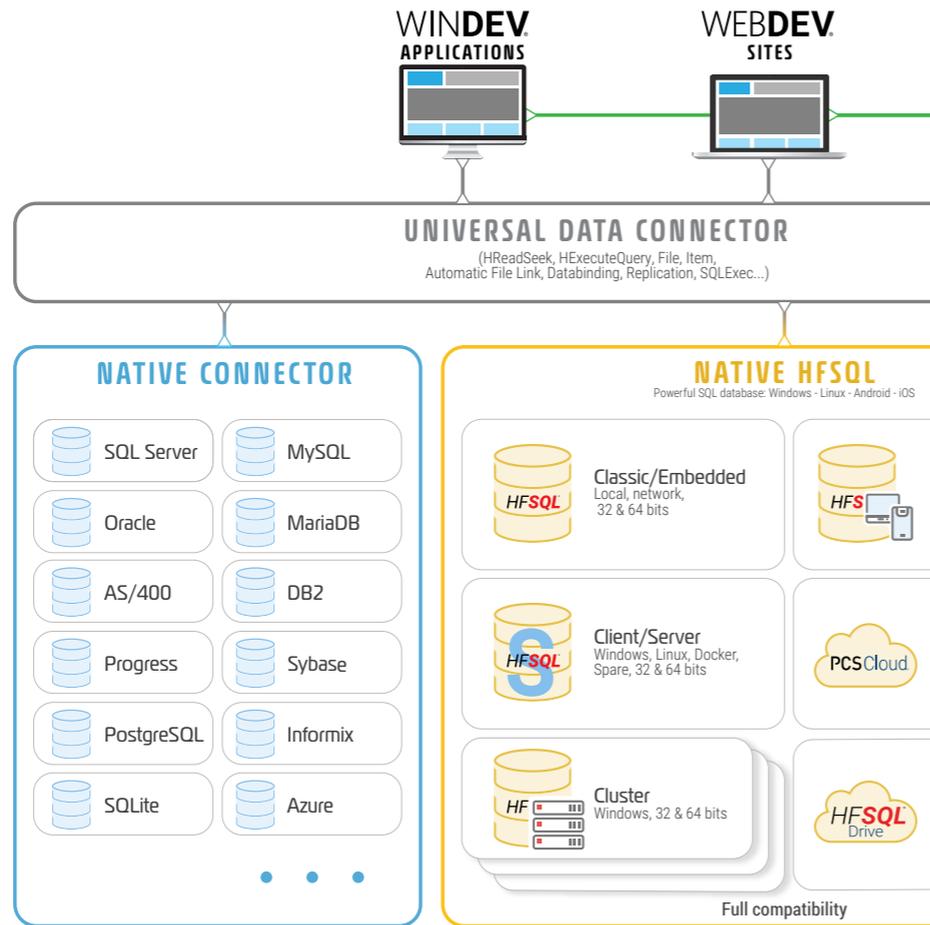


The analysis of a WINDEV, WEBDEV or WINDEV Mobile project corresponds to the LDM (Logical Data Model). The analysis contains the entire structure and data organization: data is grouped into files (data files). Each file contains multiple data fields, called items.

In the analysis, the description of a data file can be linked to a type of file (HFSQL Classic, HFSQL Client/Server, SQLite, etc.).

Types of accessible files

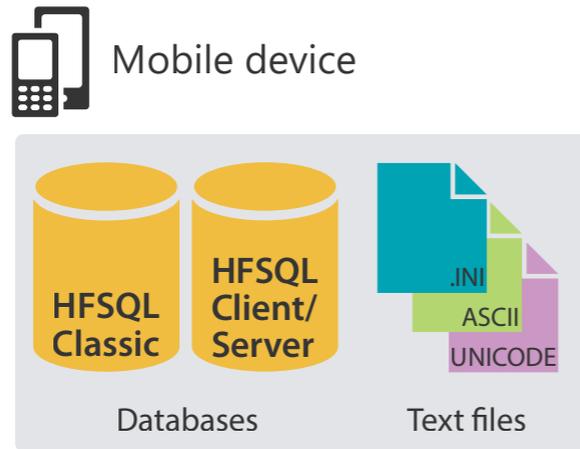
WEBDEV, WINDEV and WINDEV Mobile offer simple access to the majority of databases on the market.



Data handled by a WINDEV Mobile application

The data handled by a WINDEV Mobile application can come from:

- an HFSQL Classic or HFSQL Client/Server database (".Fic" files).
- ".INI" files.
- text files (ANSI or UNICODE).



HFSQL Classic

HFSQL Classic is the database format used with WINDEV Mobile. This format is compatible with WINDEV, WINDEV Mobile and WEBDEV.

It is a freely distributable Relational Database Management System (DBMS).

This format can be used on iOS, Android and Universal Windows 10 Apps.

This format is identical to HFSQL Classic in WINDEV and WEBDEV (".WDD" file, data files, etc.).

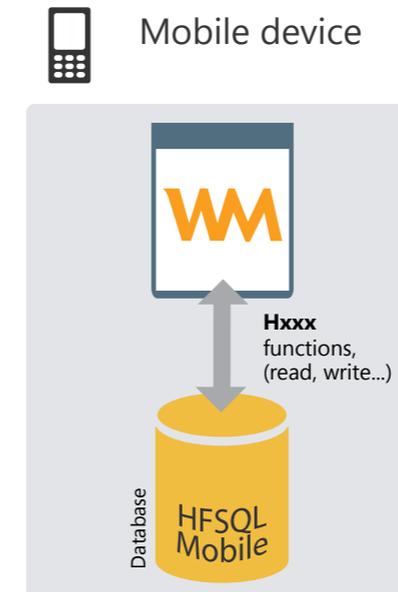
However, due to limited available space on mobile devices, HFSQL Classic does not support the following features:

- transactions.
- logs.
- locks for files and records.
- files in Hyper File 5.5 format.

Handling an HFSQL Classic database from a mobile device

An HFSQL Classic database is a set of ".FIC", ".NDX" and ".MMO" files.

Each data file can be handled by a WINDEV Mobile application. To do so, the application uses HFSQL functions (**Hxxx** functions).

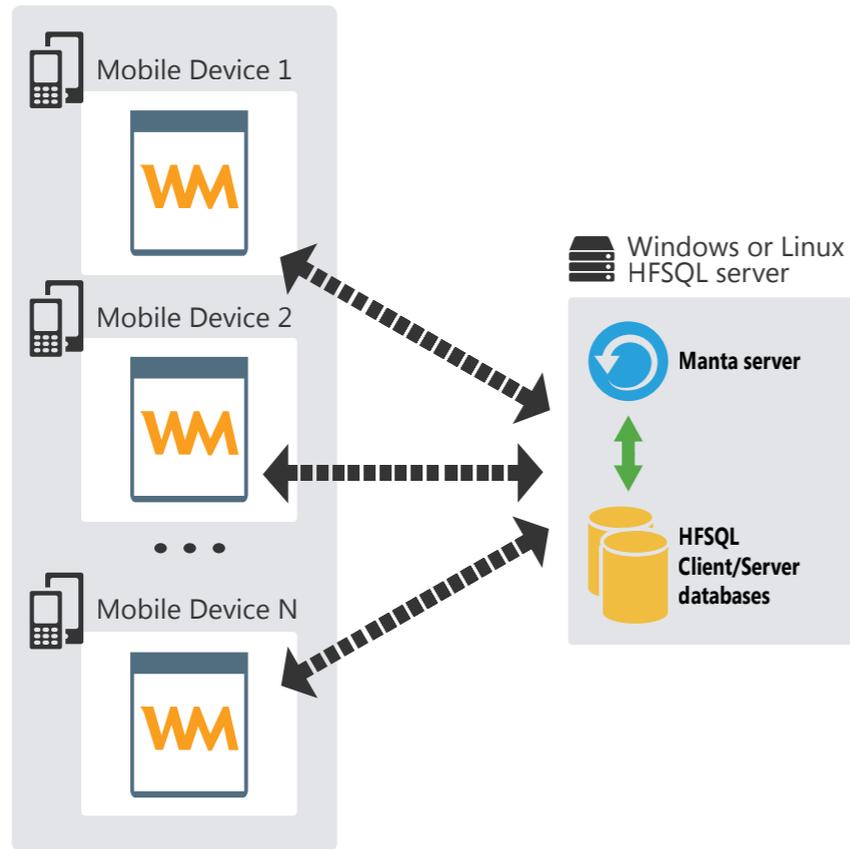


HFSQL Client/Server

A WINDEV Mobile application can also use an HFSQL database in Client/Server mode.

The characteristics of the Client/Server mode are as follows:

- An HFSQL Client/Server application can be run on different mobile devices (client computers).
- Data files are located on a server. Only the server physically accesses the data files.
- All processes (queries, read from and write records to a data file, etc.) are performed on the server.

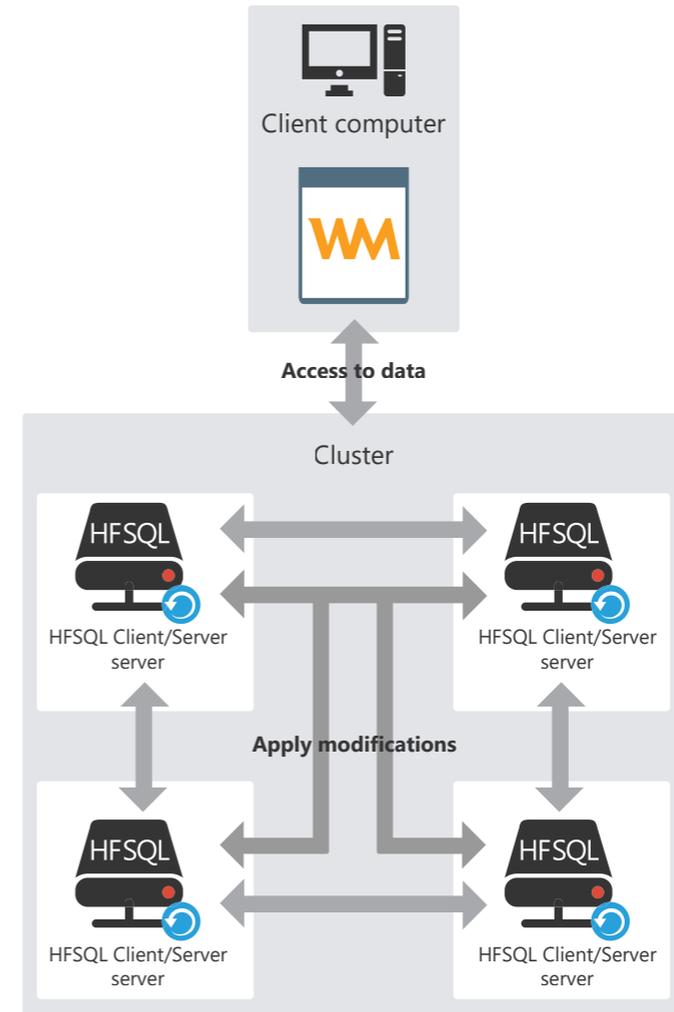


HFSQL Client/Server can be used on iPhone, iPad, Android and Universal Windows 10 Platform.

HFSQL Cluster

HFSQL Cluster is an extension of the HFSQL Client/Server database model. In a database cluster, all HFSQL servers contain a copy of the databases and are synchronized in real time.

- The read load can be balanced across multiple servers.
- You can make changes to the physical configuration without interruptions on client computers.
- If one of the servers crashes, the client is automatically redirected to an operating server.

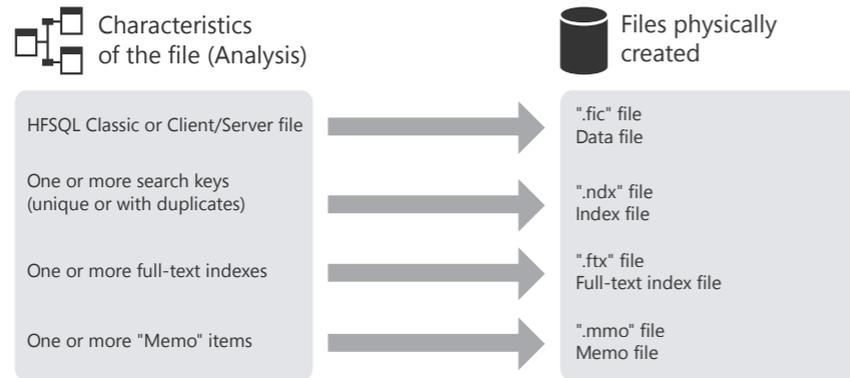


HFSQL Cluster can be used from iPhone, iPad, Android, etc.

Creating HFSQL files: files physically created

The data model editor allows you to define the structure of the data files.

Files are physically created depending on the information entered in the data model editor.



Binding controls to data

A window can display information from:

- a database: controls are directly bound to the items in the data files or queries available in the database.
- variables in the application's WLanguage code (variables global to the window or to the project or parameters passed to the window).

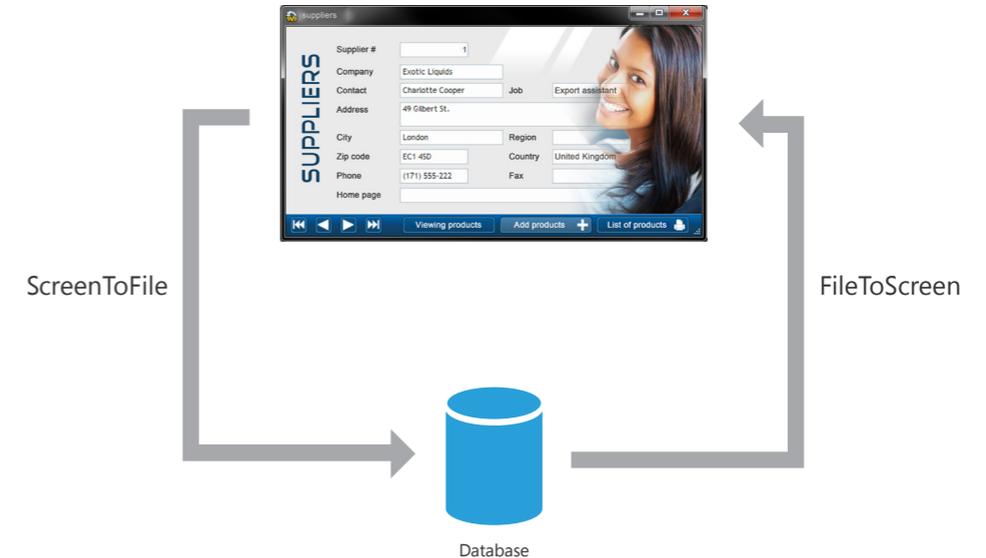
To display information in a window, the controls in the window must be bound to:

- the different items in the database.
- the available WLanguage variables.

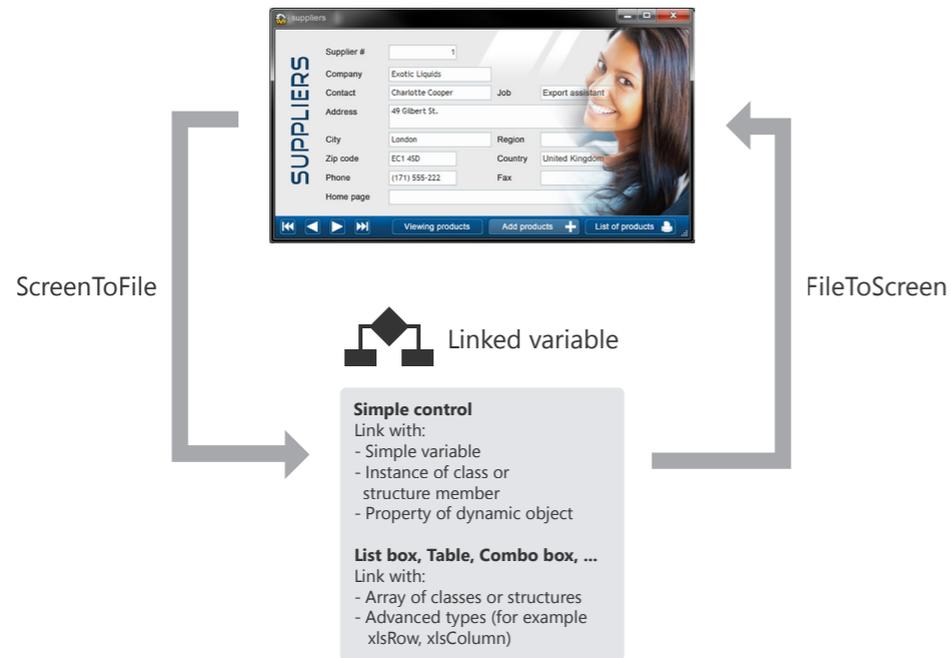
There are multiple methods to display and update values from a data source:

- The binding between a control and an item or variable can be defined in the window editor, in the control description ("Binding" tab).
- **ScreenToFile** updates the record or the variable with the values from the UI.
- **FileToScreen** updates the data in the UI with the values from the data file or variable.

Control - item binding



Control - variable binding



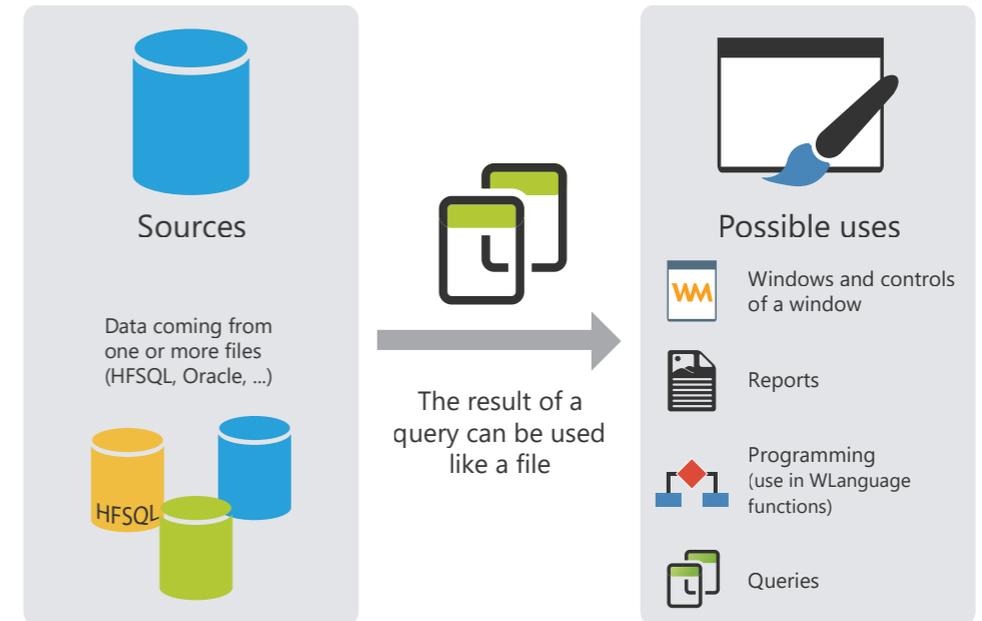
Remark: Data binding between a control and a variable is not available for Android applications.

Queries

A query is used to request information from a database to view, insert, change or delete data. The query structure defines the data used.

A query can request information from one or more data files.

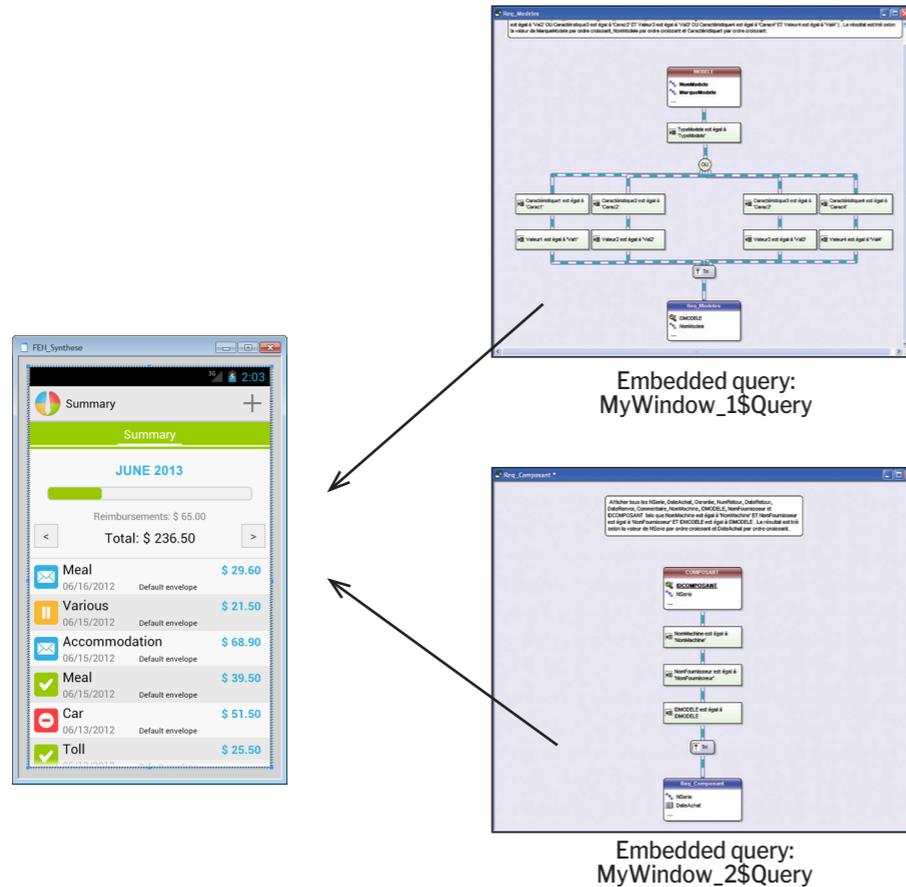
The query editor allows you to easily create queries without programming.



Remark: In the code, you can handle queries and data files in the same way. Queries can be associated with controls in the UI (a Table control, for example) to display the desired data.

Embedded queries

The controls from a window can be linked to a data file or existing query, ... These controls can also be linked to a query created when building the control.



In this case, the query is embedded in a window. It is located in the WDW file that corresponds to the window. If the WDW file is copied (to another project, for example), the embedded queries used by the window will also be copied.

Table/Looper controls

Table/Looper controls can be used to display a set of information (e.g., the content of a data file). The content of these controls can come from different sources:

- Table/Looper control with direct access to the data source.
- Table/Looper control populated programmatically.
- Table/Looper control with in-memory data source.

Remark: These three modes will be explained in detail for the Table control. However, the same concepts apply to the Looper control.

Table control with direct access to the data source

A Table control with direct access to the data source displays data directly from a data file, query or array variable. When you loop through the data file, the data is displayed in the Table control. The data file is read for each row displayed: the record that is read is displayed in a row of the Table control.



The displayed data that is not linked to the data file is lost when the row is refreshed (e.g., value of a check box column).

The number of records displayed in the control can be limited by setting a filter (**HFilter** used in the control initialization code).

The WLanguage functions starting with "Table" are used to handle Table controls with direct access to the data source. When a row is added to or deleted from the Table control, the record in the bound data file is also added or deleted.

Table control populated programmatically

In this case, the Table control directly displays the data loaded in memory. The data is added to the Table control through programming (using **TableAddLine**, for example).



Since the data is in memory, you can perform different types of operations on the Table control (e.g., sort or search for data in the columns, etc.).

Table control with in-memory data source

Table controls with in-memory data source combine the advantages of Table controls with direct access to the data source and Table controls populated programmatically.

The Table control is linked to the data file but all the contents of the data file are loaded in memory. Sort and the search features are available for all columns.

The data that is not linked to the data file (Check Box columns, for example) is not lost when scrolling the Table control.

Since data file records are loaded in memory, this type of Table control is recommended for data files with less than 100,000 records (to avoid memory overflow).



Remark: The different modes to populate the controls (programmatically, with direct access to the data source and with in-memory data source) are available for different types of controls: List Box, Combo Box, Table, Looper, etc.

Table controls are not available in Universal Windows Platform apps. Only Looper controls are available.

Synchronizing data

WINDEV Mobile allows you to synchronize the records used by multiple applications on different platforms.

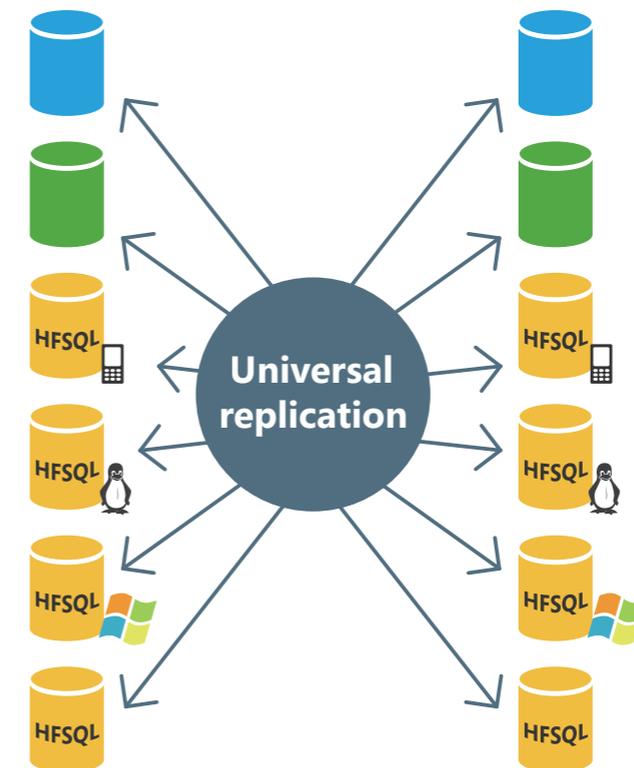
Thus, applications manage the same data independently. For example, when data is synchronized, the changes made in the database used by the PC are automatically reflected on the mobile device, and vice versa.

This synchronization is done automatically via **Universal Replication**.

Universal replication

The universal replication updates databases (with the same or different formats) used by several applications. For example, you can synchronize an HFSQL database with an Oracle database.

Universal replication uses a centralized model: all databases are synchronized with a master database. Then, the master database reflect the changes in the other databases.



The synchronization can be adapted to special cases. For example, you can retrieve the records related to a specific product or created on a given date, manage conflicts, display a configuration window, etc.

These adaptations must be done through programming with **HRplFilterProcedure**.

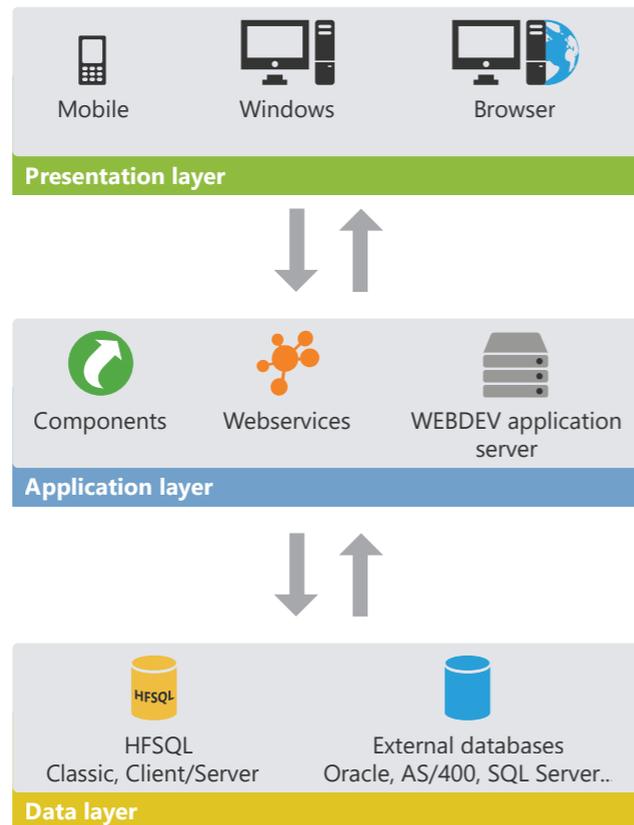
3-tier

3-tier architecture is an application architecture model.

It consists in dividing an application into 3 tiers:

- Presentation tier: the User Interface,
- Application (or processes) tier: business logic of the application,
- Data tier: to access persistent data.

The objective with this separation is to make each tier independent, in order to facilitate maintenance and future developments of the application. This provides better security because only the Application tier allows access to the database. It also optimizes teamwork and cross-platform development.



The 3-tier architecture is fully compatible with the development of applications or sites using WINDEV, WEBDEV or WINDEV Mobile.

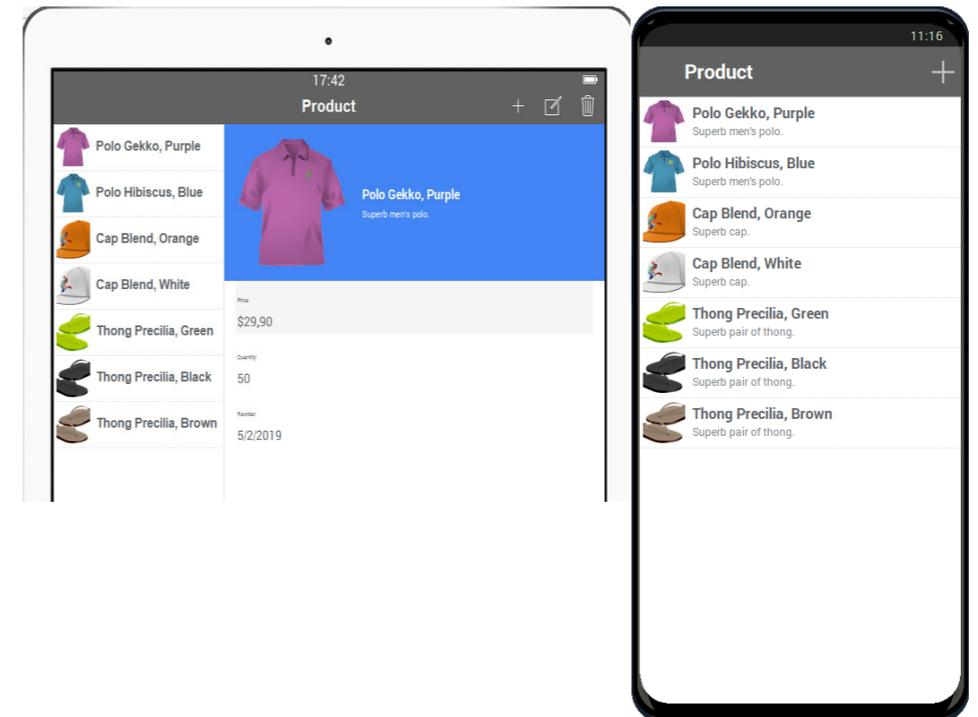


Windows generated using the RAD methodology

The RAD (Rapid Application Development) is used to create windows from:

- the analysis linked to the project,
- skin templates.

The generated windows contain the necessary source code. These windows can be tested immediately with the data present on the development computer.



Multilingual application

A multilingual application can be distributed in multiple languages. WINDEV Mobile takes into account the different languages of the application during the entire development cycle.

The main steps for developing a multilingual application are as follows:



Test of a WINDEV Mobile application

By testing the project you can simulate how the application will run. This allows you to test the entire application, even if it is still being developed.

WINDEV Mobile includes several types of project tests:

- **Test on the development computer.** This test simulates a mobile device on the development computer. No connection to a device is required during this test. This test allows you to use the debugger. However, since the test is run on a PC and not on the actual device, there may be some differences regarding application behavior.

iOS

- **Real test (iPhone or iPad).** It is possible to test the iOS application directly on a mobile device. Simply:
 - download the WMDEV application to the device (available on the store).
 - scan the bar code displayed by WINDEV Mobile, which corresponds to the application to be tested.
 This option allows you to test the application directly on a real device. The debugger is available.

iOS

- **Test on iPhone/iPad simulator.** The test of iOS application can be directly run on Mac when compiling the project in Xcode. This option does not require a real iPhone or iPad device to run the tests but it provides a more faithful execution than the "simulator" mode.



- **Test and debug on the mobile device (Android) connected to the development computer.** This test allows you to use the debugger even though it is run on the mobile device.



- **Test on the Android emulator.** The Android SDK is supplied with an emulator of Android device. The test of the application can be run in the emulator. This option does not require a real Android device to run the tests but it provides a more faithful execution than the "simulator" mode.



- **Real test (PC or mobile device).** The test of Universal Windows 10 App application can be run on a Windows 10 computer. This option allows you to run your project in tile mode, from Windows 10 directly. The Universal Windows 10 App application is automatically generated.

Debugging modes

There are two different modes to debug a WINDEV Mobile application:

- Debugging in the simulator,
- Debugging on the mobile device (available in Android and iOS).

Debugging in the simulator

This mode starts the application in a device simulator. However, the application is run on the PC, in the Windows environment.

This mode is used to quickly debug a new function or test an algorithm, but it may have a different behavior compared with the actual device:

- file paths are those used by Windows,
- strings are in ANSI format by default (not Unicode),
- the functions specific to mobile devices (e.g. SMS) are not available.

Debugging on the mobile device

This debug mode allows for a more accurate application behavior, since the debugger runs the application directly on the mobile device (Android and iOS). All specific functions can be used (except for the ones that require digitally signed executables).

This mode is slightly slower than the simulator. It adds a communication phase between the development environment and the debugger on the device.

In this mode, a mobile device must be connected to the development computer.

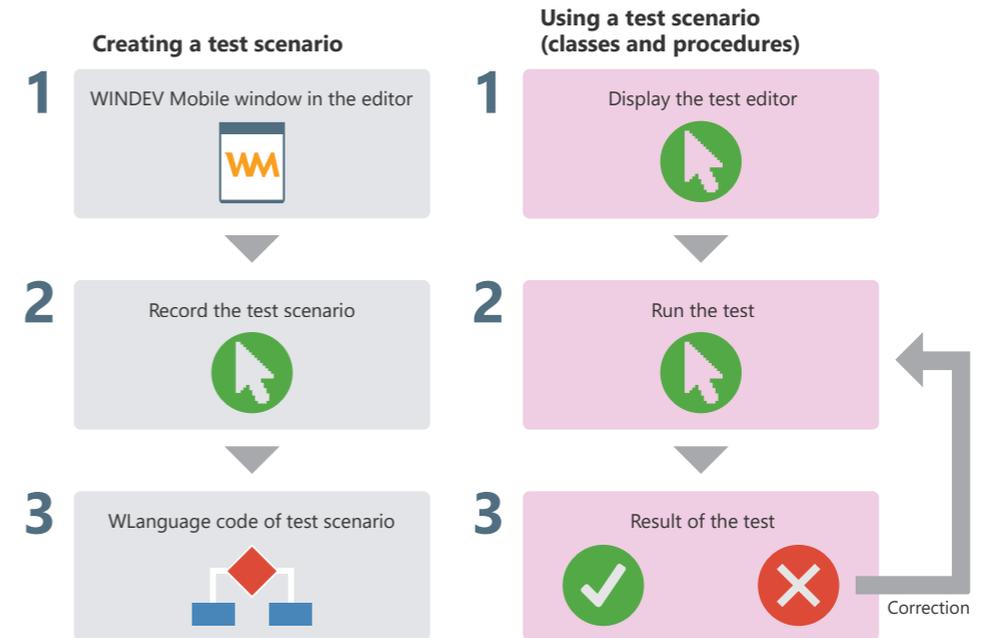
Unit tests

Unit tests (also called automated tests) are used to test windows, procedures and classes in an application at different levels of development.

To do so, select (or create) the test scenario that will be run.

Test scenarios are generated in WLanguage and can be directly modified.

These scenarios can be found in the test editor. The test editor analyzes the result of the unit tests and calculates the validation rate of the application.



To create a unit test on the current window, go to the "Automated tests" tab, "Tests" group, expand "New" and select "Record a new scenario".

To create a unit test on a procedure or on a class method, select the procedure or class method in the "Project explorer" pane and select "Unit tests .. Create a unit test" in the context menu.

PART 5

WINDEV/WINDEV
Mobile interactions

28

DEVELOP 10 TIMES FASTER

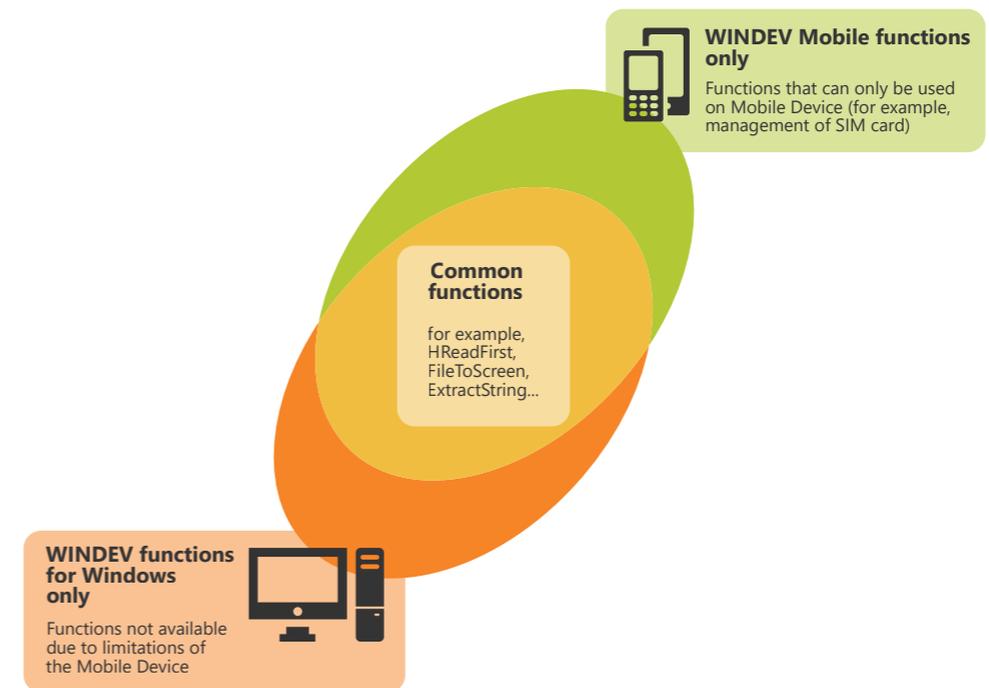
WLanguage functions

Most of the WLanguage functions available in WINDEV are also available in WINDEV Mobile. These functions are common to both IDEs.

Windows-specific functions are not available in WINDEV Mobile due to the differences between Windows and the various mobile operating systems (Android, iOS, etc.).

Likewise, some functions specific to mobile devices are only available in WINDEV Mobile.

The following diagram presents some WLanguage functions that can be used according to the type of application developed:



WLanguage functions specific to phones

The following functions are specific to Android and iOS phones...

ActionBarSearchVisible	Allows you to get and change the visibility status of the search control associated with the Action Bar in the current window.
ActionBarDeleteSearchHistory	Deletes the history from the search control found in the action bar of a window.
AlbumSave	Saves an image, a photo or a video in the photo album of the mobile device.
AlbumPicker	Retrieves a photo, an image or a video stored in the photo album of the mobile device.
AppleAdvertisingIdentifier	Returns the device's advertising identifier (iOS only).
AppleRequestTrackingAuthorizationAsynchronous	Displays the permission request for user activity tracking.
AppleSignIn	Used to implement authentication via "Sign In with Apple" on devices running on iOS 13 and higher.
AppleTrackingAuthorizationStatus	Determines if the app has been allowed to track activity based on user data (iOS only).
awSendAndGetInfo	Sends data from an iOS phone to an Apple Watch (or conversely) while expecting a response.
awSendInfo	Sends an information from an iOS phone to an Apple Watch (or conversely).
awProcedureGetAndSendInfo	Specifies the WLanguage procedure that will be called when receiving information coming from awSendAndGetInfo .
awProcedureGetInfo	Specifies the WLanguage procedure that will be called when receiving information coming from awSendInfo .
BeaconStopBackgroundDetection	Stops one or more Beacon detections in the background.
BeaconStopPreciseDetection	Stops the Beacon detection started by BeaconDetectPrecise .

BeaconDetectBackground	Notifies the application when the device enters or leaves the transmission range of a set of Beacons.
BeaconDetectPrecise	Used to find the Beacons near the device.
BeaconListBackgroundDetection	Returns the list of active Beacon detections started in the background with BeaconDetectBackground .
BrightnessAuto	Returns or modifies the activation status of the automatic adjustment of the brightness on the device.
BrightnessModify	Modifies the setting of the brightness for the device screen.
BrightnessGet	Returns the current setting of the brightness for the screen of the device.
BufferToURI	Saves the contents of a buffer to a resource identified by its URI.
CameraGenerateThumbnail	Generates a thumbnail of the specified photo or video.
CameraPhoto	Captures a photo via a Camera control in an Android or iOS application.
CameraRequestPermission	Requests permission to use the device's camera.
CameraRunApp	Starts the device's native camera application to record a video or to take a photo.
CameraStartDecoding	Starts decoding bar codes in a Camera control.
CameraStopDecoding	Stops decoding bar codes in a Camera control.
CameraVideoStop	Stops the video recording previously started by CameraVideoStart .
CameraVideoStart	Starts recording a video via a Camera control in an Android or iOS application.
ChangeTheme	Is used to change, through programming, the theme (dark or light) used by the mobile application.
CheckUserIdentity	Allows you to check the real identity of the current user via biometrics check.
DownloadAdd	Adds a new download in the device's download manager.
DownloadList	Lists the downloads from the current application in the download manager.

DownloadGetInfo	Retrieves the details of a download present in the download manager.
DownloadRemove	Cancels a download by removing it from the download manager, and deletes any existing files.
FileToURI	Saves the contents of a file to a resource identified by its URI.
geoGetAddress	Retrieves an address or a list of addresses corresponding to the description of a geographic location.
geoRunApp	Starts the device's native maps application to display: <ul style="list-style-type: none"> • a specific geographical location, • a route between two locations.
geoTrackingEnable	Enables the management of location tracking in a WINDEV Mobile application.
geoTrackingDisable	Disables the tracking of user positions for a WINDEV Mobile application.
geoTrackingProcedure	Defines the WLanguage procedure that will be called when the location of the user changes.
GestureNbPointer	Returns the number of pointers in contact with the screen.
GestureCurrentPointer	Returns the pointer index (finger or stylus) that triggered the call to a process specific to the multi-touch feature in an Image control.
GesturePosX	Returns the horizontal position of the pointer (finger or stylus).
GesturePosY	Returns the vertical position of the pointer (finger or stylus).
inAppPurchaseProduct	Sends a request for purchasing an "In-App" product associated with the application.
inAppConsumeProduct	Used to consume, in an application, a product that was previously purchased by the user.
inAppListPurchase	Returns the list of application products purchased by the user and not consumed.
inAppListProductInfo	Retrieves, from the store, information about the "In-App" products associated with the application.

inAppRestorePurchases	Restores the purchases of non-consumable products previously performed by the user in an iOS application.
inAppCheckSubscription	When starting the iOS application, checks whether the In-App subscriptions have been renewed.
KioskEnable	Switches the current Android application to kiosk mode.
KioskDisable	Disables kiosk mode for the current application.
LEDSwitchOn	Switches the LED (Light-Emitting Diode) of the device on.
LEDSwitchOff	Switches the LED (Light-Emitting Diode) of the device off.
MobileNetworkStatus	Returns the current status of the connection to data on the mobile network or asks to be notified when the status of the connection to data changes.
MobileNetworkConnectionInfo	Returns information regarding the current connection to data on the mobile network.
NFCWriteTag	Starts writing data to an NFC tag.
NFCSendTag	Sends a NFC tag to another device.
NFCStatus	Returns the activation status of the NFC sensor found on the device.
NFCReadTag	Starts reading a NFC tag or enables the detection of NFC tags for the current window.
NotifAdd	Adds a notification into the system bar of device (Android) or into the notification center (iOS).
NotifListCategory	Lists the notification categories of the application.
NotifModify	Modifies a notification currently displayed in the system bar of the device.
NotifPushEnable	Enables the management of push notifications in a WINDEV Mobile application (Android or iOS).
NotifPushDisable	Disables the management of push notifications for a WINDEV Mobile application (Android or iOS).
NotifPushSend	Sends a push notification to a mobile device (iOS or Android).

NotifPushProcedure	Specifies the WLanguage procedure called when a push notification is received by a WINDEV Mobile application (Android or iOS).
NotifDelete	Deletes a notification displayed in the system bar of the device.
NotifDeleteCategory	Deletes a notification category from the application.
PermissionRequest	Prompts the user to grant an application permission.
PermissionList	Returns one or all the permissions declared by the application.
PhotoRunApp	Starts the native camera application of the device in order to take a photo.
PowerStatus	Used to get various information about the battery (main or secondary) of the device on which the application is running.
RecorderAction	Runs an action on the recorder or dictaphone found on the current device.
ScreenType	Returns the type of screen on which the application is run: phone, tablet, computer or watch.
ScreenSize	Returns the size (in inches) of the diagonal of the screen on the device where the application is run.
SensorDetectChangeAcceleration	Notifies when acceleration forces are applied to the device along any of the three axes.
SensorDetectChangeOrientation	Allows you to be notified when the orientation of the device changes on any one of its 3 axes.
SensorDetectBeginShake	Notifies when the device is shaken in any direction.
SensorDetectEndShake	Notifies when the device has been shaken in any direction.
SensorGetOrientation	Retrieves the current orientation of the device on one of its 3 axes.
SIPVisible	Displays the keyboard.
SMSSend	Sends an SMS.
SMSRunApp	Starts the native application for sending SMSs found on the device (Android or iPhone/iPad).

SMSNbMessage	Returns the number of SMS messages stored on an Android phone.
SMSFirst	Reads the first SMS message stored on the Android phone.
SMSReset	Resets all variables of SMS structure.
SMSNext	Reads the following SMS message stored on the Android phone.
SMSDelete	Deletes an SMS message from the memory of the Android phone. This function should no longer be used.
SpeechSynthesisStop	Stops all the current read operations on the engine for speech synthesis.
SpeechSynthesisInProgress	Used to find out whether a read operation is in progress on the engine for speech synthesis.
SpeechSynthesisInitialize	Initializes the parameters of speech synthesis for the current application.
SpeechSynthesisListVoices	Returns the list of voices available on the device for the speech synthesis engine.
SpeechSynthesisReadFile	Reads the content of the specified file by using the engine for speech synthesis found on the device.
SpeechSynthesisReadText	Reads the specified text using the device's text-to-speech engine.
tapiDialerDisplay	Opens the default telephony application (dialer) and displays the specified number. No call is made.
tapiDialerCall	Opens the default telephony application (dialer) found on the phone and dials the specified number.
URIGetInfo	Retrieves information of a URI resource.
URIToBuffer	Loads in the background the content of a resource (image, text, etc.) identified by its URI in a buffer variable.
URIToFile	Saves, in the background, the content of a resource (image, text, etc.) identified by its URI in an external file.
VibrationStop	Stops the vibrations of the device (even if they have been triggered by another application).
VibrationTrigger	Triggers the vibrations of the device.

VolumePhysicalButton	Identifies or modifies the sound source associated with the physical buttons used to set the volume of the device.
VolumeModify	Modifies the setting of the volume for a sound source.
VolumeGet	Retrieves the current setting of the volume for a sound source.
WidgetDisplay	Refreshes a widget window.
WidgetRunApp	Starts the application to which a widget belongs.
WidgetProcedure	Specifies the procedure that will be called when the user clicks an iOS 14 widget.
WiFiActivate	Enables or disables Wi-Fi on the device.
WiFiAddNetwork	Adds a new network to the list of Wi-Fi networks configured on the device.
WiFiConnect	Connects the device to the specified Wi-Fi network.
WiFiDetectAccessPoint	Starts detecting the Wi-Fi access points currently accessible from the device.
WiFiStatus	Returns the current activation status of Wi-Fi on the device or asks to be notified when the activation status of Wi-Fi changes.
WiFiConnectionInfo	Returns the requested information about the current Wi-Fi connection of the device.
WiFiListNetwork	Returns the list of Wi-Fi networks configured on the device.
WiFiDeleteNetwork	Deletes a network from the list of Wi-Fi networks configured on the device.

PART 6

Setup



Installing an Android or iOS application

There are multiple methods to install a WINDEV Mobile application:



- **Installation via APK file.** This installation is run on the Android device.
- **Installation via Google Play.**
- **Installation via the Private Store.**

iOS

- **Compilation in Xcode on Mac.** The compilation in Xcode is used to create the executable application on iPhone or iPad.
- **Installation:**
 - via App Store,
 - via an In-House network,
 - via an ad hoc network,
 - via the Private Store.



- **Installation via Microsoft Store.**
- **Direct installation on a phone.**
- **Installation on a tablet.**

Types of setup

Setup in APK format

This installation consists in:

- generating the application on the development computer.
- signing the APK file digitally.
Note: a self-signed key can be used.
- copying the APK file to an Android device.
- running the APK file on the Android device. This action starts the application setup.

To run the application, all you have to do is click its icon in the "All programs" menu.



Setup via Google Play

Google Play is a Google application. Google Play features Android applications that can be purchased or downloaded via a unique interface on Android devices.

This installation consists in:

- generating the application on the development computer.
- signing the APK file digitally. To deploy apps to Google Play, it is recommended to use a real key signed by a recognized trusted authority.
- uploading the APK file to the Google Play website.
Note: you must be registered on the site.

Users simply need to install the desired application directly from Google Play.

To run the application, select it among the installed applications.



Setup via App Store

iOS

App Store is an Apple application. App Store features iPhone and iPad applications that can be purchased or downloaded via a unique interface on Apple devices.

This installation consists in:

- generating the application on the development computer.
- preparing the images required for the deployment.
- compiling the application in Xcode.
- saving the application in "iTunes Connect".
- compiling the application in Xcode.
- uploading the application on the App Store.

Users simply need to install the desired application directly from the App Store.

To run the application, select it among the installed applications.

Setup by adhoc and in-house

iOS

This type of deployment allows you to distribute your application on an iPhone or iPad device.

Most of the operations will be performed on the Web, then in the "Apple Developer Center", then in the Xcode compiler on a Mac.

Depending on your iOS development license, you can to use one of the following installation modes:

- ad hoc, to install the application on several devices (up to 100).
- in-house, to install an application on all the devices belonging to the company. The application will be distributed either via a private Web server of the company, or via iTunes.

Setup via MDM (iOS and Android private store)

This type of deployment allows you to distribute your application on iPhone, iPad or Android devices.

This type of installation consists in:

- Configuring the server that will host the application setup.
- Enabling the Private Store in your application.
- Generating the application.
- Uploading the application to the Private Store.

Users simply need to install the desired application via the link or corresponding bar code directly from their devices.

Setup via Microsoft Store



Microsoft Store is a Microsoft application. It features Universal Windows 10 Apps that can be purchased or downloaded via a unique interface on Windows 10 devices.

This installation consists in:

- generating the application on the development computer.
- uploading the application to the Microsoft Store website.

Note: you must be registered on the site.

Users simply need to install the desired application directly from the Microsoft Store (Windows 10 device, tablet, PC, or phone).

To run the application, select it among the installed applications.



Communication with WINDEV Mobile

WINDEV Mobile includes several communication functions for different fields.

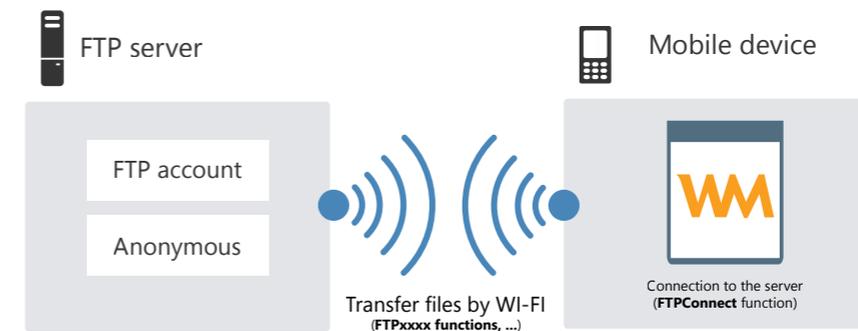
These functions allow you to:

- manage emails (POP3, IMAP and SMTP protocols),
- transfer files via FTP,
- perform HTTP and HTTPS requests,
- use the telephony,
- perform SOAP requests (to access SOAP, J2EE or .Net Webservices),
- manage SMSs,
- use TCP sockets (with automatic use of the SSL protocol) and UDP sockets,
- use Infrared or Bluetooth sockets.

The availability of these functions depends on the features of the device that is running the application.

Example: Communication over WiFi

The communication over WiFi can be used to transfer files via FTP, for example.

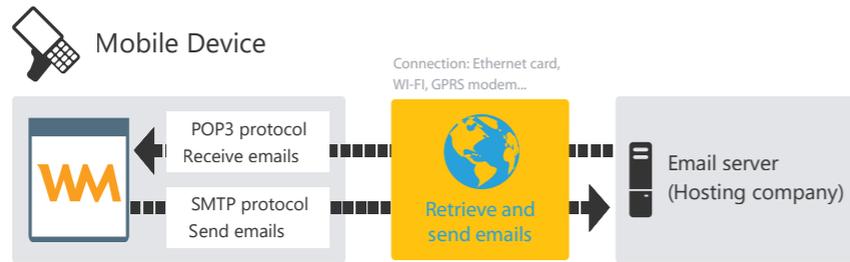


Managing emails (POP3/IMAP/SMTP)

POP3/IMAP and SMTP are email management protocols recognized by all service providers. These protocols allow you to communicate with the email server available at your ISP.

Remarks:

- POP3 and IMAP are used to receive emails.
- SMTP is used to send emails.



Principle

1. Start an email session with **EmailStartSession**.
2. Send and read the messages.
3. Close the email session with **EmailCloseSession**.

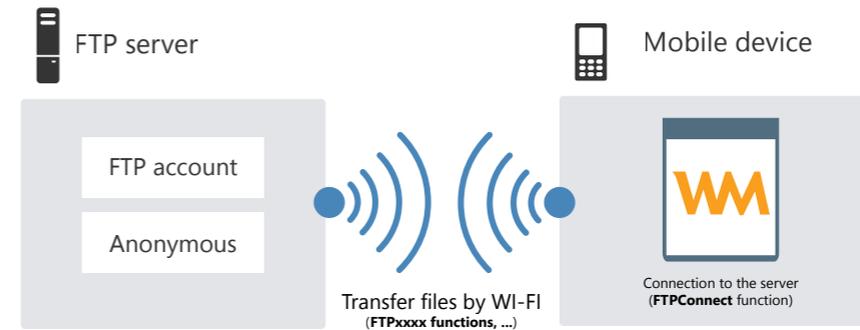
Handling files on an FTP server

FTP (File Transfer Protocol) is a protocol for transferring files from one site to another. This protocol is used to transfer files via TCP/IP, the Internet, Wi-Fi or ActiveSync.

On the Internet, thousands of file servers can be accessed via FTP. These servers host shareware or freeware software accessible to the public.

Several WLanguage functions allow you to manage files on an FTP server from your WINDEV Mobile applications.

Direct file transfer between a Mobile Device and an FTP server over Wi-Fi:



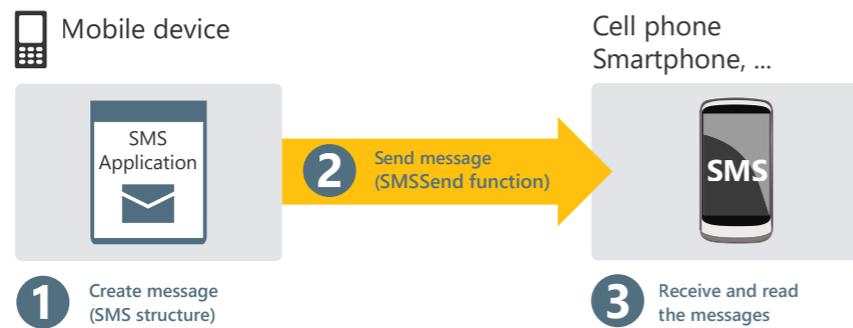
Managing SMS messages

With the WLanguage functions, WINDEV Mobile allows you to:

- send SMSs.
- navigate through incoming SMSs.
- delete one or more incoming SMSs.

SMS (Short Message Service) commonly refers to text messages (up to 160 characters) sent to a cell phone.

To use SMS functions, the WINDEV Mobile application must be installed on a phone.



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Examples provided with WINDEV Mobile

The examples provided with WINDEV Mobile are designed to help you discover its features. Their source code is clear and includes comments.

These examples can be opened directly from the WINDEV Mobile home window:

- If the example is not installed on the computer, it will be automatically downloaded (from a PC SOFT server) and opened.
- If the example is installed on the computer, a copy is automatically created in "My projects\My examples".

The open example corresponds to the copy of the original example. This allows you to work or make changes to this copy. The original example can be kept unchanged. Every time you open the example (via the "Open an example" option), you can work on the copy or on the original version. Below are some features of the examples provided with WINDEV Mobile.

Android examples

Android Chromebook	This example shows the compatibility of WINDEV Mobile applications for Android with Chromebooks.
Android Downloads	This example illustrates background downloads in WINDEV Mobile and Android.
Android Explorer	This example is used to list the files and directories found on an Android device.
Android Generated Reports	This example shows how to use the option "Generate the print script", which is available on Android reports.
Android GPS	This example presents the use of the GPS functions of WLanguage in an Android application.
Android Inventory	This application is used to draw up inventories and to save the results in a database.
Android Persistent Notifications	This example is used to create persistent notifications that appear even if the application is not used anymore.
Android Speech Synthesis	This educational example shows how to manage voice recognition and synthesis on Android. The speech synthesis is performed by using either the WLanguage functions, or an external JAR file included in the WINDEV Mobile project.
Android Zebra MX	This example allows you to access and modify the system settings of ZEBRA devices.

Android Zebra Print	This example shows how to use the internal component "PrintConnectAPI", intended for printing with Zebra printers.
Android Zebra RFID	This example allows you to manipulate RFID readers in Zebra devices
Android Zebra Scan	This example shows how to use the internal component "ScannerDataWedge", designed for scanning bar codes with Zebra devices running on Android.
Android ZIP	This example is used to browse the folders of the Android device to find ZIP archives.

iPhone/iPad examples

iOS Watch	This example explains how to establish a dialog between an Apple Watch application and an iPhone application.
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Cross-platform examples (Android and iOS)

WM Attendance	This application is an attendance manager. It allows you to list the persons who attended a meeting.
WM Bluetooth 4	This example explains how to use the Bluetooth Low Energy functions (Bluetooth LE): BTLExxx. It is an application allowing you to find the nearby BTLE devices, to connect to them and to interact with the proposed services.
WM Chart	This example presents different ways to use a chart control.
WM Click on Chart	This example is used to offset the sections of a Pie chart via a simple click.
WM CRM	This example is a CRM application.
WM Discover MVP	This example shows the implementation of an MVP (Model View Presenter) architecture in a project. This example has been simplified to better explain the concepts of this architecture.
WM Expense Account	This example is used to enter your expense reports and to take a snapshot in order to follow up.
WM Food	The WM Food example explains how to interact with the OpenFoodFacts database from a WINDEV Mobile application via the webservice proposed by this database.
WM FTP Client	This example is an FTP Client.
WM Gallery Control	This example shows how to use the "Image Gallery" control.

WM Geolocation	This example explains how to manage proximity searches with geolocation: <ul style="list-style-type: none"> • search around me. • search in a city, at a given address, near an address. The results are displayed in a loop and in a map with markers.
WM HTML Dialog	This example explains how to dialog with an HTML control. It is using the WLanguage "ExecuteJS" function and the Javascript "WL.Execute" function.
WM Kanban	This example illustrates how to use, save and load a Kanban control
WM Loan	This application was developed in one day, thanks to the power of WINDEV Mobile and the ease-of-use of WLanguage.
WM Managing Contacts	This example presents the management of contacts for Android and iOS.
WM Managing Orders	This example is a simplified management of orders and invoices.
WM Notes	This example is using the drawing functions of WLanguage for Android and iOS. It allows you to draw graphic "notes" and save them.
WM Organizer Control	This example shows how to use the Organizer control on Android and iOS.
WM Password	Web sites, bank accounts, ... our life is filled with passwords. With WM Password, no need to store all the passwords of your different accounts.
WM Photos	This example is used to take photos and to save them with a title and keywords. A search can also be performed. The photos are stored in the application directory therefore they are private (not visible by other applications).
WM Poker	This example is a game of poker for Android, iOS and Universal Windows 10 App smartphones.
WM Poll	This examples is used to manage and view polls.
WM Popup	This example shows how to use popups and asynchronous popups for Android and iOS with WINDEV Mobile
WM Quizz	This application allows you to check your knowledge and competence on WEBDEV. This project explains how to generate an application for different platforms from the same code. This example contains an Android and iOS configuration.
WM Reports	This example shows how to use reports in WINDEV Mobile.

WM RSS Reader	This example is a reader of RSS stream for the Android and iOS devices. This application will allow you to follow the news of your favorite streams.
WM Shopping	This option is used to manage several shopping lists.
WM Sports	This example is a sport application used to save your performances.
WM Stocks	This application is used to draw up inventories and to save the results in a database.
WM System	This application is an example of some of the features of WINDEV Mobile available for Android/iOS.
WM Tic Tac Toe	This example presents the famous "Tic Tac Toe".
WM ToDo List	This example is a manager of To-Do Lists.

UWP examples

UWA Notes	Application for managing notes.
UWA Orders	This training example presents, via a management of orders, the proper use of GUI when developing Universal Windows Platform Apps applications.
UWA Password	Application for managing passwords.
UWA Stopwatch	This example explains how to create a stopwatch.

You can find additional examples on our website (www.windev.com).