
10
DEVELOP 10 TIMES FASTER
PC SOFT

WinDev Mobile - Concepts
Version 16 - (1) 03-2011

Remember to visit our Web site (**www.windev.com**) on a regular basis to find out whether upgrades are available.

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

This documentation is not contractually binding. PC Soft reserves the right to modify or delete any topic dealt with in this document.

In which order should these guides be read?

WinDev Mobile is a powerful tool used to develop applications for Windows Mobile systems and Android; it comes with all the tools needed for creating and implementing applications.

To quickly and efficiently learn how to use WinDev Mobile, we advise you to work in the following order:

1 Read the "Concepts".
This guide presents the main concepts required for creating a WinDev Mobile application.

2 "Tutorial" (book + exercises)
The Tutorial provides a first "hands-on" approach to WinDev Mobile. It enables you to familiarize yourself with the main editors of WinDev Mobile.

3 Test the examples
Run the test of the examples supplied with WinDev Mobile in the fields you are interested in (SMS, poll, and so on).

The "WLanguage" book (provided in PDF format) presents WLanguage programming. For each programming theme, you will find a description of the associated concept and the list of corresponding WLanguage functions.

The online help, accessible from **http://doc.windev.com** or installed with WinDev Mobile lets you easily find the syntax of a WLanguage function, get help about an interface, ...

Note: If there is a difference between the guide and the online help, follow the instructions given in the online help.

We hope you enjoy getting started with WinDev Mobile.

TABLE OF CONTENTS

PART 4 - APPLICATION DEVELOPMENT: ADVANCED CONCEPTS

PART 5 - WINDEV/ WINDEV MOBILE INTERACTIONS

PART 6 - SETUP

PART 7 - COMMUNICATION

PART 8 - APPENDICES


PART 1
Basic concepts
10
DEVELOP 10 TIMES FASTER
PC SOFT

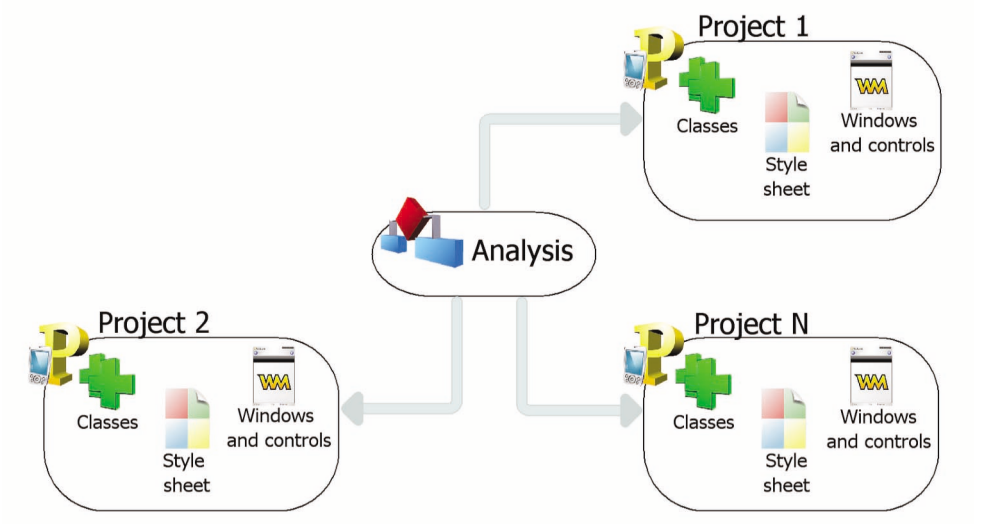
Project and Analysis

The development of an **Application** 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, ... whose combination is used to develop an application.

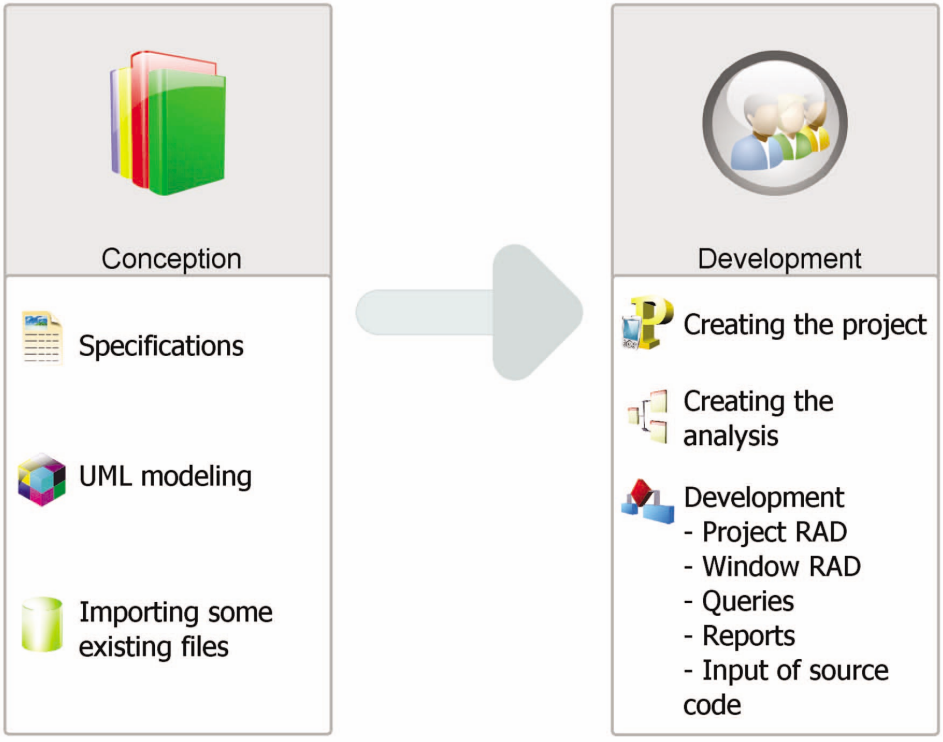
A ***WinDev Mobile analysis*** groups the description of the data files found in the application.

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.



Development cycle of an application

WinDev covers the entire development cycle of an application:



Details of the different steps:

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

Development step: The project and the analysis are created via specific wizards. Development can be done in RAD mode (Rapid Development Application) with automatic generation of the code and UI or it can result from the manual creation of the project elements.

Test and generation step: WinDev Mobile offers several tools for running automatic tests in order to guarantee the reliability of applications and the non-regression between the development steps.

Deployment step: A WinDev Mobile application can be deployed according to several methods: on the Mobile directly, by download or via Android Market. In any case, the HyperFileSQL data files will be automatically updated according to the evolutions made in the application.

WinDev Mobile: the platforms

The applications developed with WinDev Mobile can operate on the following platforms:

- Windows Mobile 2003/2003 SE (VGA) and Windows CE 4.0 for Pocket PC and for Smartphone.
- Windows Mobile 5.0 for Pocket PC and for Smartphone.
- Windows Mobile 6.0 to 6.5 for Pocket PC and for Smartphone.
- Windows Phone 7
- Android version 1.5 and later.

The following processors are supported for the WinDev Mobile platforms:

- **ARM and compatible** (Strong ARM, XScale, Samsung, Texas Instrument, ...)
- **ARM v4T and ARM v4T-compatible** (**XScale, ...**)

The following symbols will be used in this book:

This symbol indicates a paragraph containing some information specific to the development for the Android platform.

This symbol indicates a paragraph containing some information specific to the development for the Windows Mobile platform (all versions).

This symbol indicates a paragraph containing some information specific to the development for the Windows Phone 7 platform.

Windows

The windows are the foundation of the UI (User Interface) of an application.

WinDev Mobile includes an advanced window editor allowing you to easily develop all types of UI.

Several features enable you to easily obtain intuitive and user-friendly applications among which:

- some powerful controls
- an anchoring mechanism allowing the UI to automatically adapt to the size of the display. This mechanism is useful when developing mobile applications because it is used to adapt to the different resolutions of the devices.
- a UI compilation system with error detection (empty titles, untranslated captions, overlap, etc.)

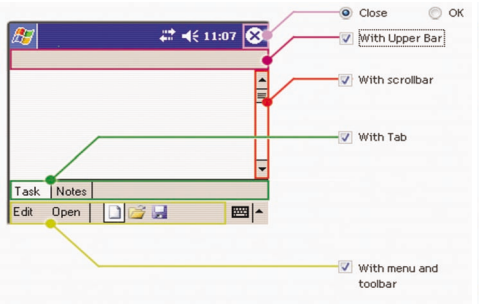
The different types of windows

Two types of windows can be used by the WinDev Mobile applications:

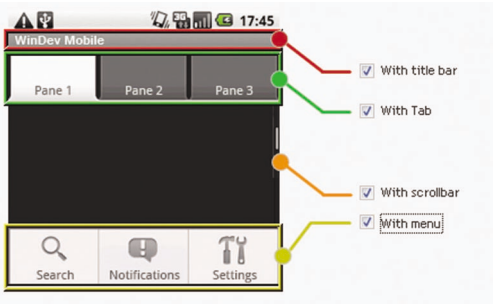
- **The maximized windows** (the most often used). A maximized window occupies the entire screen.
- **The non-maximized windows.** A non-maximized window can be resized by the user and it may occupy part of the screen only.

The maximized windows

The main elements of a maximized window are as follows:



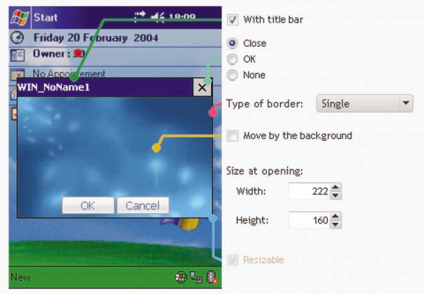
Windows Mobile



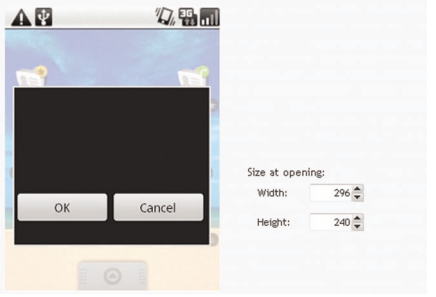
Android

The non-maximized windows

The main elements of a non-maximized window are as follows:



Windows Mobile



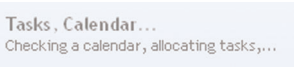
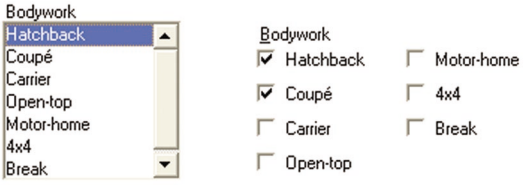
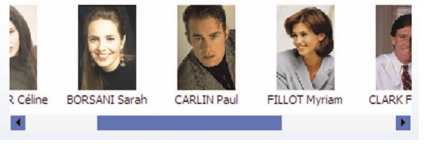
Android

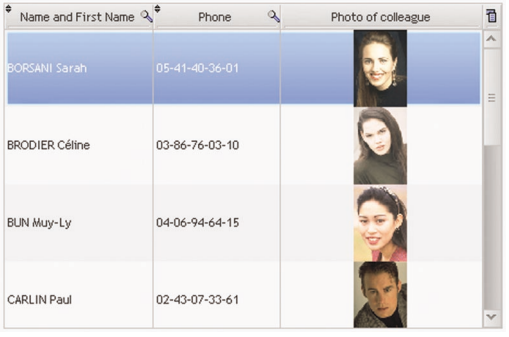
Managing the display resolution

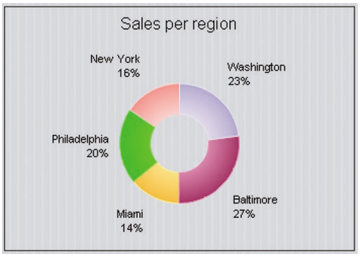
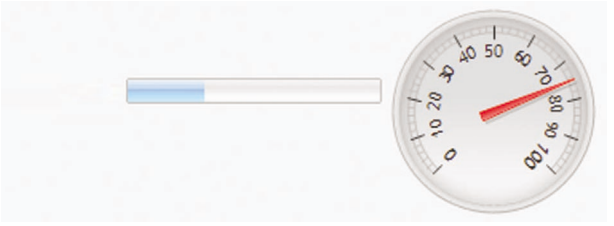
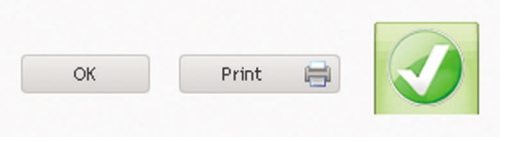
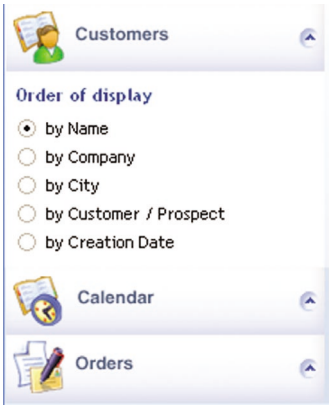
The windows created with WinDev Mobile for the Android applications automatically adapt to the screen resolution of the devices at run time.

Controls available in a window

Several controls are available in WinDev Mobile:

You want to ...	Use a control of the following type
Display some text, a title, ... 	 Static control
Enter some information 	 Edit control
Select a value from a list (country, city, currency, ...) 	 Radio button,  Combo box,  List box
Select several values from a list 	 Check box,  List box
Select one or more values from a listview (picture directory, ...) 	 ListView
Display a graphic image (photo, statistics, chart, ...) 	 Image

Display a video, an animation  	Multimedia Image
Enter a date in a calendar  	Calendar
Display the content of a file in a table (list of customers, order details, ...)  	Browsing table or memory table
Repeat some controls in a window (product catalog with photo, ...)  	Looper

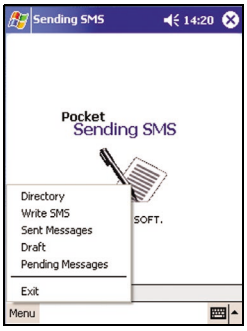
Display a bar chart, a line chart, a pie chart 	 Chart
Display a progress 	 Progress bar
Program an action in a window (display another window, start a printout, ...) 	 Button
Group the controls by theme and display the themes one by one 	 Tab,  Sidebar

Menus

The menus created by WinDev Mobile automatically adapt to the runtime platform.

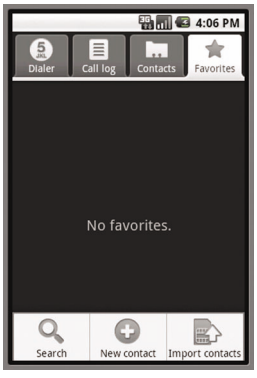
Windows Mobile

The menus are displayed at the bottom of the window.
The menu options can easily be selected with the stylus of the device or with a finger.



Android

The menus are displayed at the bottom of the window when the user presses the "Menu" key. The menus with less than 6 entries can contain some symbols. The longer menus are displayed as standard drop-down menus.



Managing the keyboard

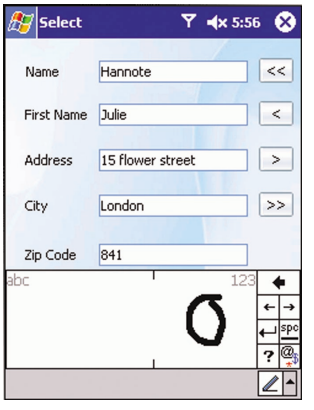
To allow the users of your applications to enter some data, the keyboard of the Pocket PC must be used (also called SIP for "Software Input Panel"). This keyboard allows you to:

- display a miniature keyboard at the bottom of the screen. The user clicks this keyboard with the stylus to enter some information:

- automatically recognize the different words written on the screen with the stylus (method called "Transcriber").

- automatically recognize the letters entered in a specific character set (method called "Letter Recognizer"):

- automatically recognize the blocks of words entered in a specific character set (method called "Block Recognizer"):



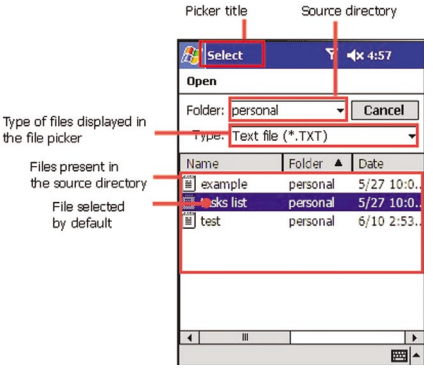
WinDev Mobile enables you to easily manage this keyboard via the WLanguage functions (***SIPXXX*** functions).

File picker in Windows Mobile

File picker

In Windows Mobile, ***fSelect*** is used to select a file found:

- in the "\My Documents" directory or in one of its sub-directories.
- in a directory found on a storage card.



Path of directories and files

The method for managing the directories differs on a Windows computer and on a mobile device.
In Windows, the paths have the following format: "C:\My Documents\My File.txt".

In Windows Mobile, the paths have the following format: "\MyDocuments\MyFile.txt". There is a single tree structure and the notion of drive does not exist.
Note: The notion of current directory does not exist in the Windows Mobile operating system. Therefore, the functions that handle the current directory (***fCurrentDir*** for example) are not available in WinDev Mobile and the paths of the files must always be absolute paths.

In Android, the file paths have the following format: "/sdcard/Documents/My File.txt". The directory separator is "/" and not "\" like in Windows. There is a single directory tree structure.

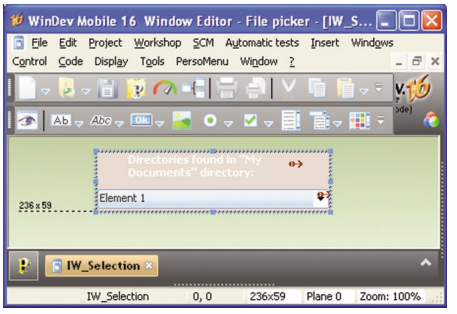
Note: On the contrary, the relative paths and the concept of current directory exist in Android.

Internal window

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

1. Creating an internal window ("File .. New .. Window .. Internal window").

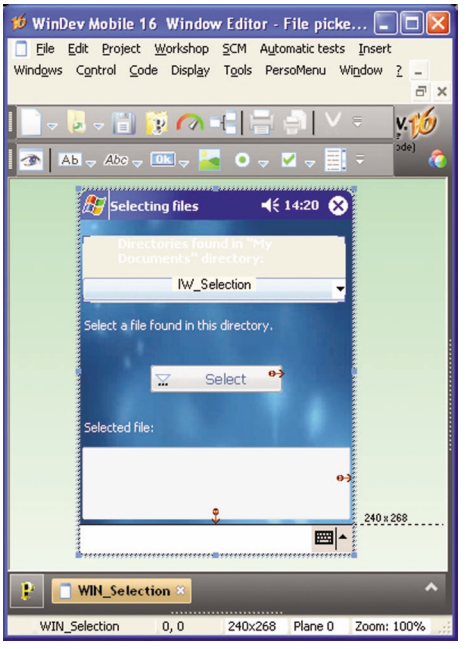
An internal window is a specific window that contains no title bar, no menu.
All types of controls can be used in this window.



2. Using an internal window.

All you have to do is:

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

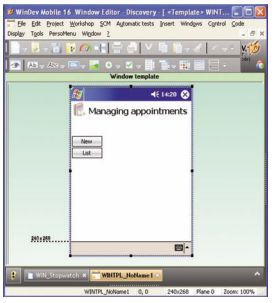


Notes:

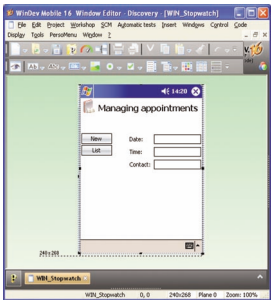
- You can also modify by programming the internal window used in the "Internal window" control.
- Limitations: The host area is rectangular and no overload is possible. In this case, we recommend that you use some control templates.

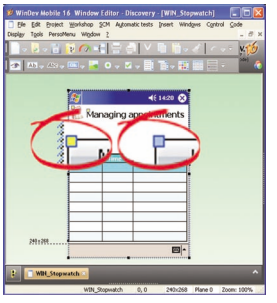
Window templates

WinDev Mobile enables you to create some window templates. These templates contain all the graphic elements common to all the windows of your application.
The modifications performed in a window template are automatically applied to all the windows that use this template.
A window template enables you to comply with the style book defined for an application.



Defining a window template.
The template is bordered by a green line in the editor.





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

A window template can be created:
- directly ("File .. New .. Window .. Window template").
- from the current window ("File .. Save as template").

To create a window based on a template, select the template that will be used during the window creation.

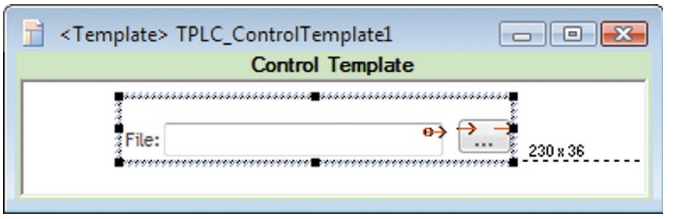
Note: The programming associated with the template elements can be directly performed in the template.

The characteristics of the elements can be dissociated from the template. For example, the position of a control can be dissociated from the template so that the control can be located somewhere else while it still benefits from the other features (code, style, ...). We talk of **control inheritance**. In this case, the elements are identified by a blue square.

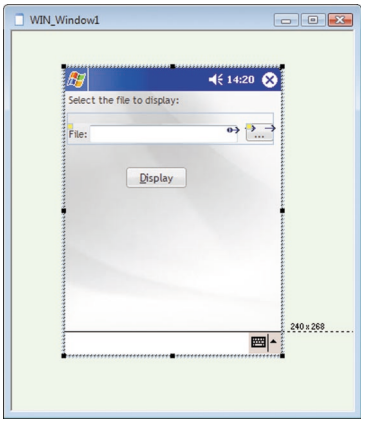
Control templates

WinDev Mobile enables you to create some control templates. A control template is a set of controls that can be re-used in several windows.
The modifications made to a control template are automatically applied to all the windows that use this template.
A control template is used to:

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



Defining a control template.
The template is enclosed by a green line in the editor.



Using the template in a window.
The elements belonging to the template are bordered by a blue line and identified by a yellow square.

A control template can be created:

- directly ("File .. New .. Window .. Control template")
- from the controls found in the window ("Control .. Refactoring .. Create a control template from the selection").

To create a window based on a control template, create a "Control Template" control.
Note: The programming associated with the template elements can be directly performed in the template.

The characteristics of the elements can be dissociated from the template. For example, the position of a control can be dissociated from the template so that the control can be located somewhere else while it still benefits from the other features (code, style, ...). We talk of control inheritance. In this case, the elements are identified by a blue square.

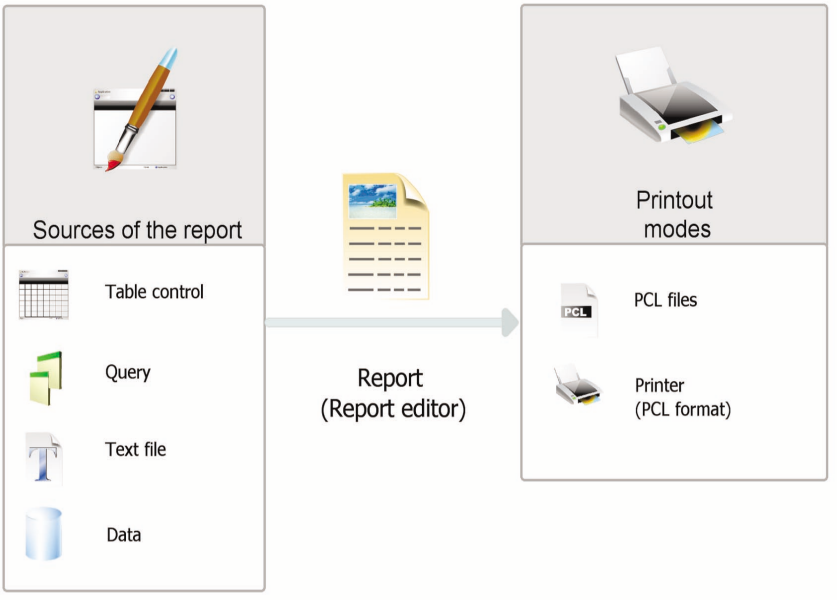
Reports

Windows Mobile

WinDev Mobile enables you to easily create and print all types of reports with the report editor.
The generated reports can be printed in PCL format (".PCL" file or print on a PCL printer).

A report can be used to summarize and synthesize the data.
You can:
- group the data.
- sort the data according to any criterion.
- perform some calculations (averages, statistics) or create some charts.

The diagram below presents a simplified definition of a report:
- the data to print comes from a data source (file described in an analysis, HyperFileSQL view, query, memory zone or text file).
- the report groups, sorts and organizes the data.
- the execution of the report can be performed on a PCL printer or in a PCL file.

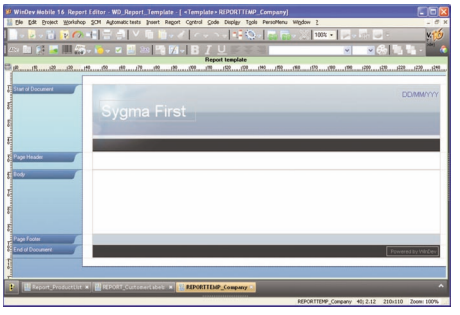


Other print modes
WinDev Mobile also enables you to pint in WLanguage (iXXX functions).
You also have the ability to directly send the sequences of commands to a printer (if this one is not in PCL format).

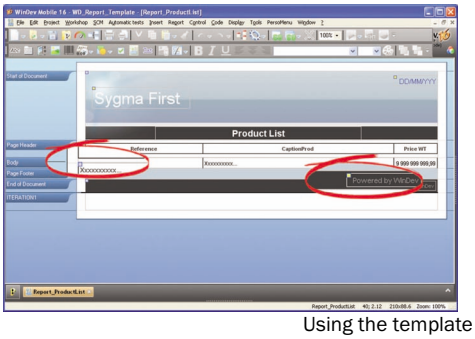
Report templates

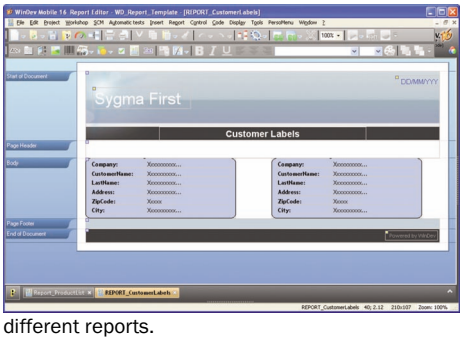
Windows Mobile

In most cases, the printouts use a standardized appearance and layout: date in the top right corner in a specific format, page footer with print time and file name, logo in the top left corner, ...
The report templates allow you to easily standardize the layout of your reports.



Defining a report template
in the report editor.





Using the template in different reports.
The elements belonging to the template are identified by a yellow square.
The overloaded template elements are identified by a blue square.

A report template can be created:
- directly ("File .. New .. Reports .. Report template").
- from the current report ("File .. Save as template").

To create a report based on a template, select the template that will be used during the report creation.
Note: The programming associated with the template elements can be directly performed in the template.

The characteristics of the elements can be dissociated from the template. For example, the position of a control can be dissociated from the template so that the control can be located somewhere else while it still benefits from the other features (code, style, ...). We talk of **inheritance**. In this case, the elements are identified by a blue square.


PART 2
Development
Environment
10
DEVELOP 10 TIMES FASTER
PC SOFT

Project dashboard

The project dashboard is a main element for managing the WinDev Mobile projects. The project dashboard gives an overall view of the progress status of a project.

The dashboard proposes two modes for viewing the project:
- The Developer mode.
- The Project Manager mode.

In Developer mode, the dashboard includes:
- some lights: Everything is OK when the lights are green. The red lights indicate a possible problem.
- some lists of elements, giving quick access to the main options of the project.
- some counters, used to manage the new features, the requests, ...

In Project Manager mode, the dashboard is used to provide graphic information about the progress status of the project and about the quality of the project. This mode is recommended when using the Project Monitoring with requirement management.

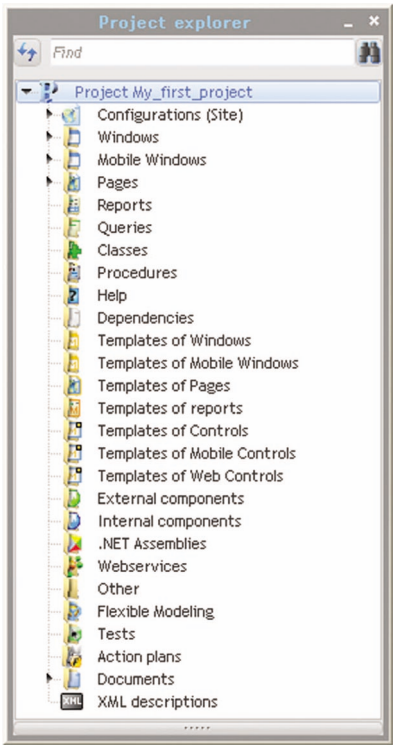
WinDev, WebDev, WinDev Mobile: a 100% compatible format

The created projects are often multi-target projects.
For instance, for an ERP system intended for Windows, it is very likely that beside the main application, which will be the backbone of the solution, there will be sales people equipped with PDAs or Smartphones, shops that will use mobile terminals to manage inventory and that Intranet and Internet sites will be implemented.

All the elements, except for the UI (pages and windows), are 100% compatible and sharable among the WinDev, WebDev and WinDev Mobile projects.

Indeed, the sets of procedures or the classes can be shared among several projects for instance.

Regardless of the product used to create a project, it can be opened by the other products.



When a project is opened in a product other than the one where it was created, a wizard is displayed, allowing you to create a **project configuration** specific to the product used.

For instance, if a WinDev project is opened by WebDev, you will have the ability to create a project configuration named "Site" used to group all the elements required by the WebDev site.

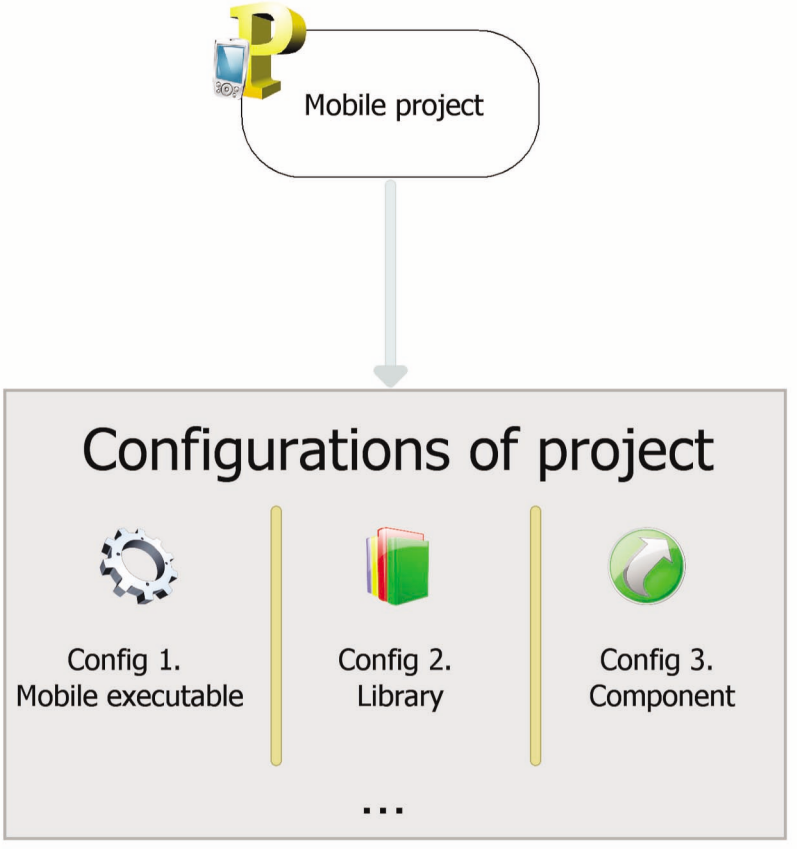
You now have the ability to view the elements of each target from each environment. A project in WinDev displays the thumbnails of the WebDev pages and the WinDev Mobile windows for instance. Clicking a WebDev page from the project editor of WinDev opens the WebDev page (WebDev must be installed on the computer).

Project configuration

The project configurations are used to create several different "targets" from the same project.
From the same project, you have the ability to create:

- some executables that do not contain the same elements, that have different names, ...
- some today screens for the Windows Mobile environment
- different components

You can work on a specific configuration at any time: the elements that do not belong to this configuration are grayed in the project graph.



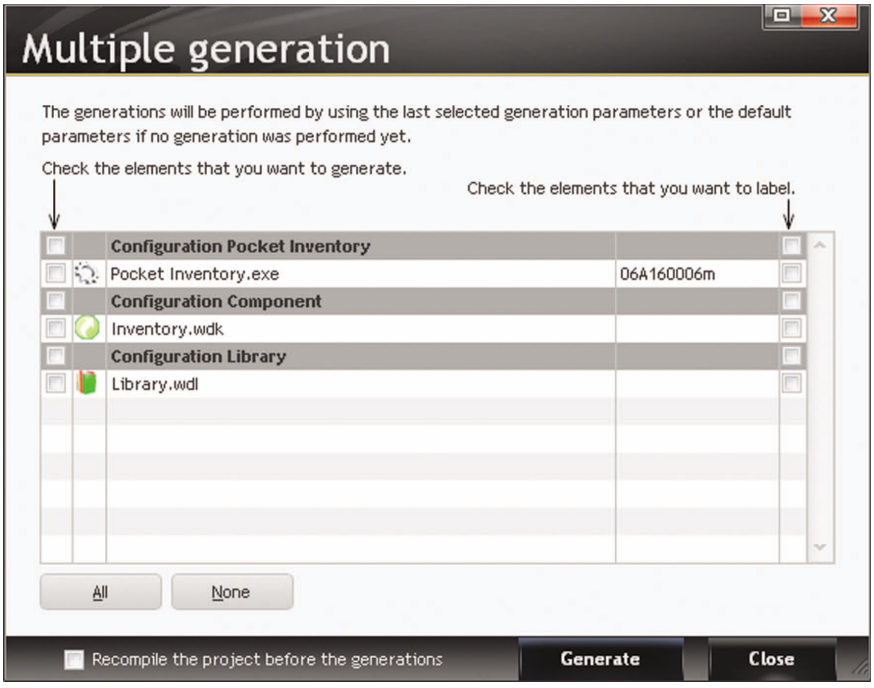
The multiple generation allows you to generate all the project configurations (or some of them) in a single operation.

Multiple generation

The project configurations are used to easily define the different "Targets" of your project. Several executables, several components and several libraries can be defined for the same project.

To generate the result of each configuration, you can select each configuration one by one and generate the corresponding program.

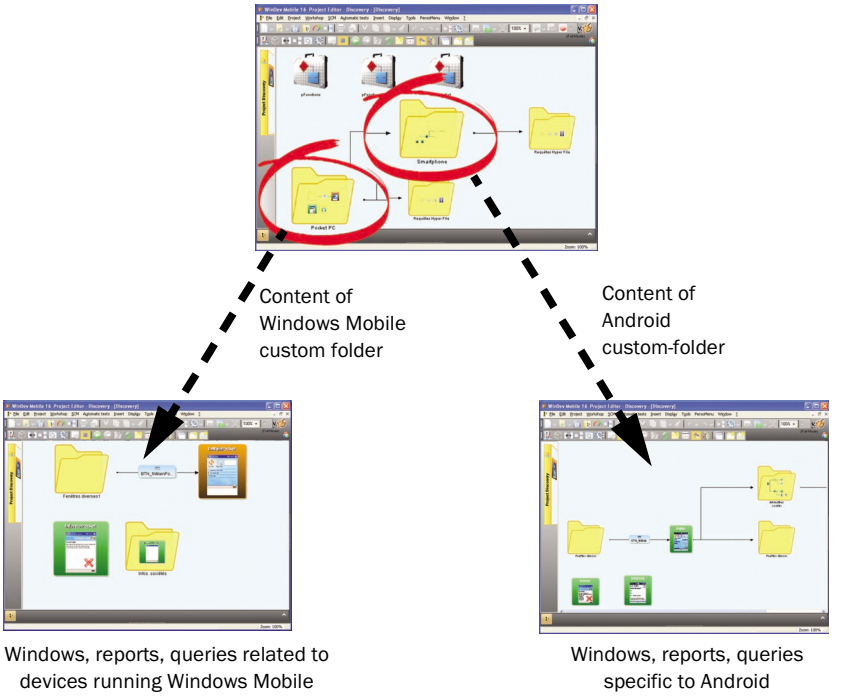
Another faster method is available: **the multiple generation**. The configurations to generate are selected in a single operation and the result is immediate.



To start a multiple generation, select "Workshop .. Multiple generation".

Custom-folders: Organize your project

All the 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...
In large projects, it is often more relevant to group the elements that relate to the same feature: stock management or order management for example.
To do so, create some "custom folders" in the tree structure of the project explorer and drag the different elements in these folders.
Some elements can be common to several "custom-folders".
It makes it easier to work on part of the application.



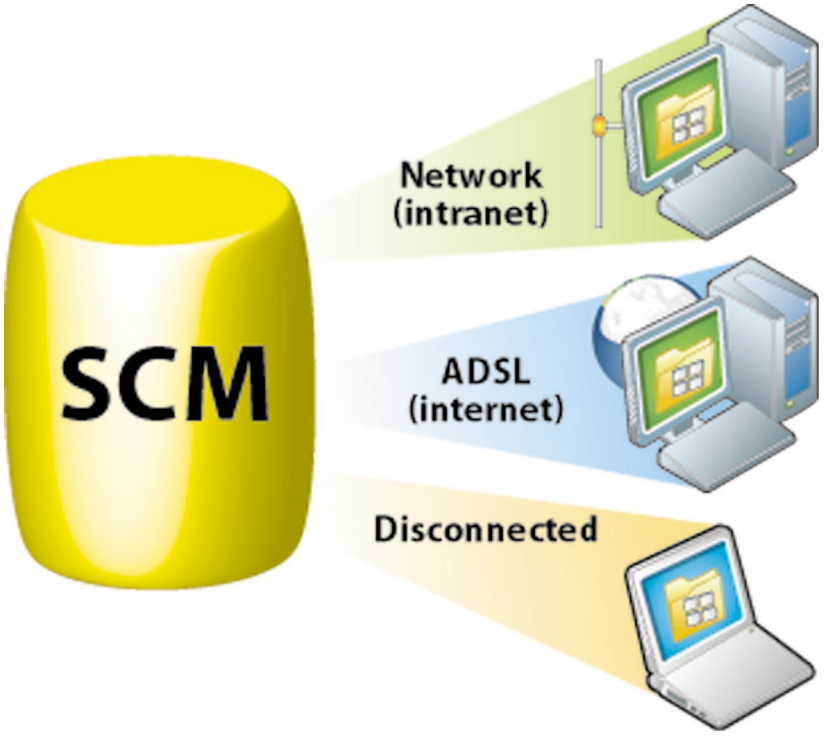
Notes:

- To organize your projects while sharing a set of elements among different projects, WinDev Mobile also offers internal components.
- The "custom-folders" are displayed in the project explorer and in the project graph.

Source Code Manager (SCM)

Overview

To simplify teamwork, a Source Code Manager is available in WinDev Mobile. This Source Code Manager allows several developers to work together on the same project at the same time and to share elements among several projects.



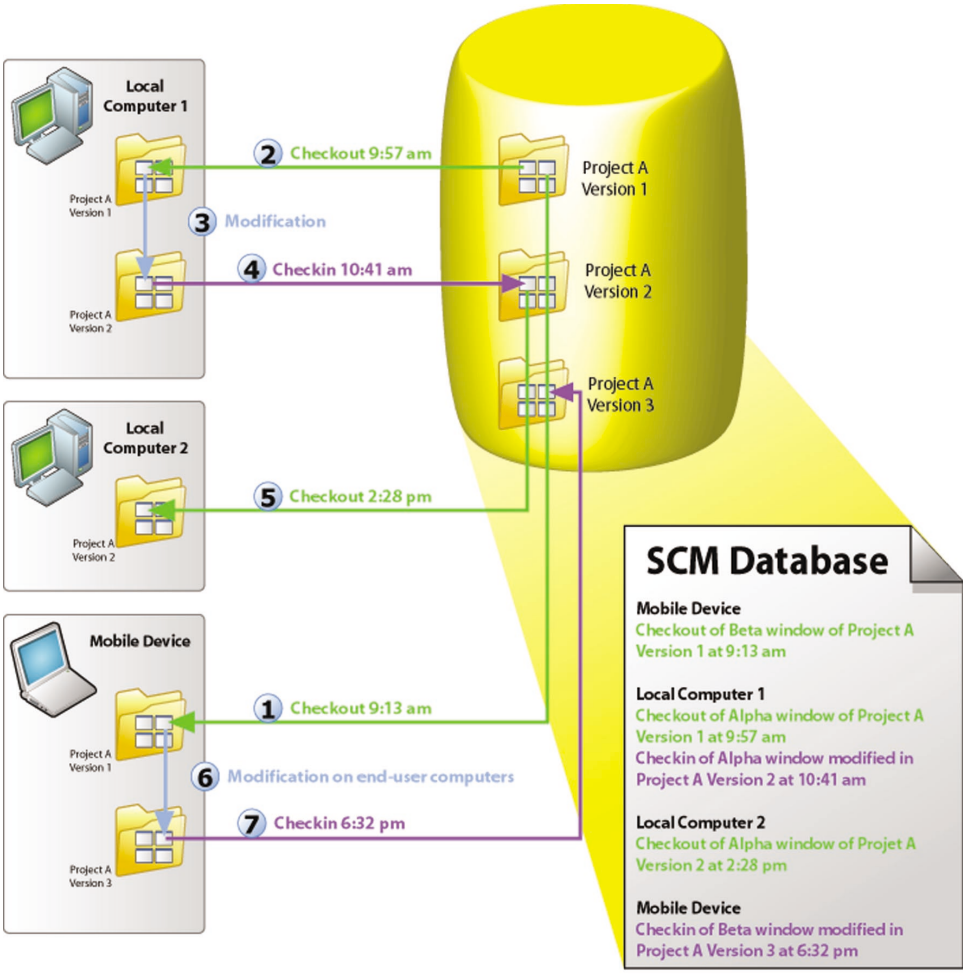
A database groups the project elements, each computer has a local copy of the elements required for the development

The elements found in SCM can be shared:

- via a network
- via Internet
- in offline mode. In this case, the elements that require some specific attention will be checked out from SCM when the laptop is connected to the main system for instance.

Operating mode of the Source Code Manager

The following example presents the Source Code Manager:



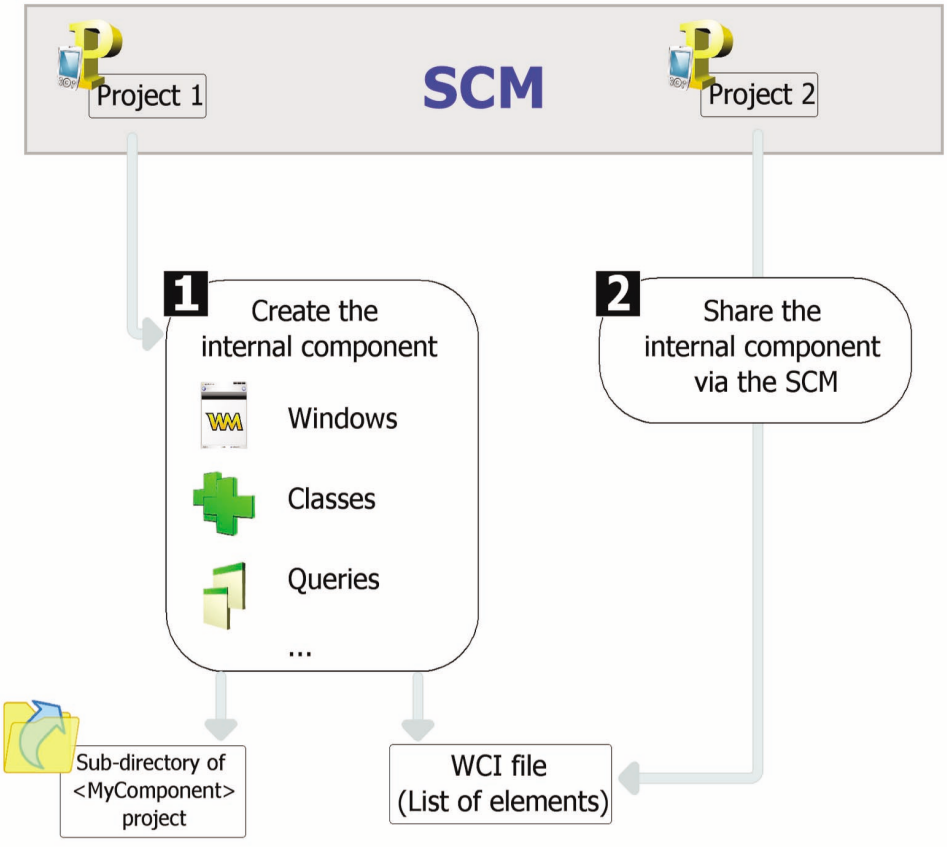
If a project element (window, report, ...) is checked out, this element cannot be checked out twice.
Once the checked-out elements are modified, these elements must be checked back in order for the modifications to be taken into account by the source project. Indeed, the SCM database stores a history of all the project elements since their creation.

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

Internal component

An internal component is used to group several project elements. This grouping allows you to:

- Organize a project: you have the ability to create internal components to group the project elements by feature for instance.
- Share the elements among several projects, via SCM.



The elements found in an internal component can be private or public:

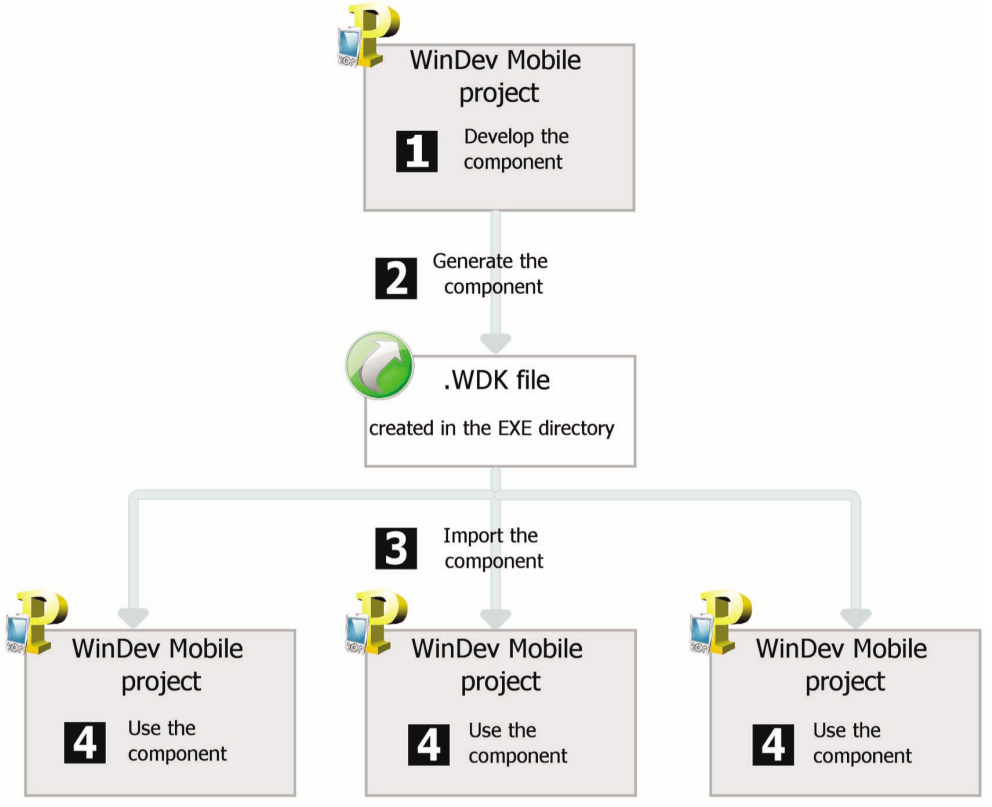
- The private elements can be handled by the other elements of the component.
- The public elements can be handled by the elements of the project that uses the internal component.

External component

An external component is a set of WinDev Mobile elements: windows, reports, analysis, ... This set of elements performs a specific feature. For example, an external component can correspond to one of the following features:

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

An external component can be distributed to other WinDev Mobile developers (for free or at a cost). These developers will be able to easily include the feature proposed by the external component in their application. The external component will be included in the application and distributed along with it.



Generation modes

WinDev Mobile allows you to generate several other types of projects.

Windows Mobile applications

Applications are the most used generation mode. Applications developed with WinDev Mobile can run on Windows Mobile (version 2003, 5.0, 6.0 and 6.5) and they support the ARM and ARM4T processors.

Android applications

WinDev Mobile is used to generate some applications for the Android platform. These applications can be started on the smartphones, tablets and ultra-portable devices that use this operating system (from version 1.5). These applications can also be distributed on the Android Market for example.

Libraries and patches

A library is a unique file that groups several elements of a WinDev Mobile project: windows, reports, etc. You have the ability to generate some stand-alone libraries that can be used by other applications as well as corrective patches for an application that is already deployed ; this enables you not to have to reinstall the full application for a minor correction.

External components

External components are application bricks allowing you to share one or more specific features among several applications. A component generated by WinDev can also be used in a WebDev or WinDev Mobile project.

Today Screen

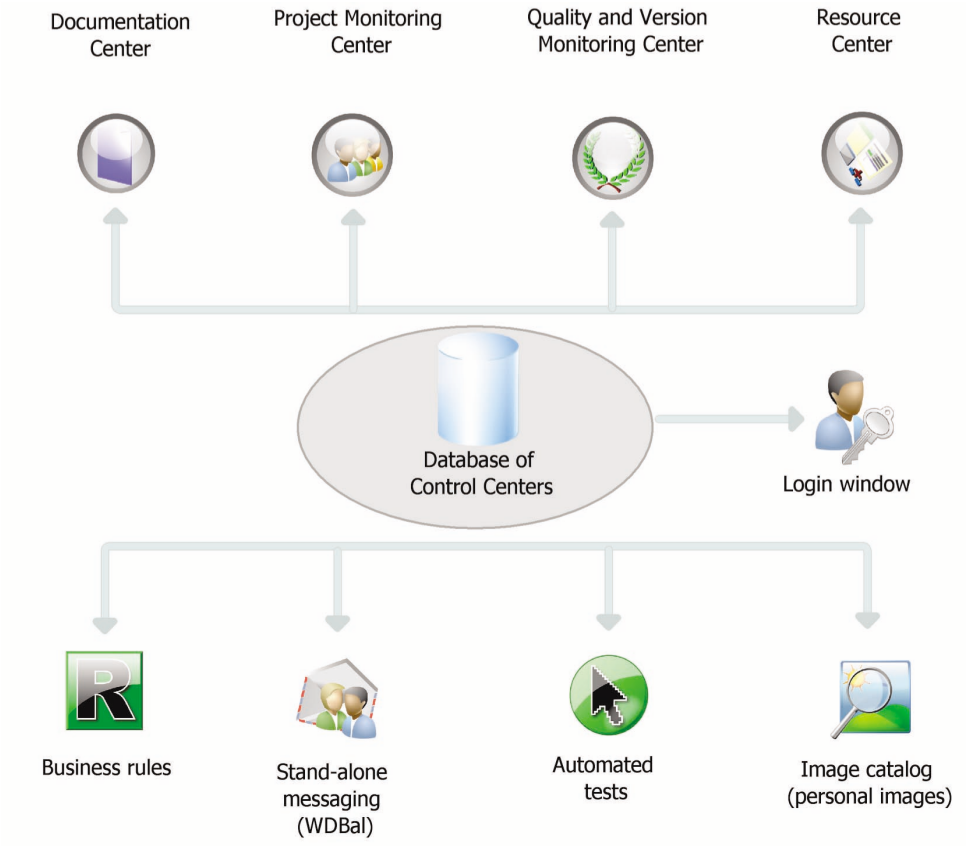
The Today Screens are a specific type of application for Windows Mobile that display their main window directly on the home screen of the device. WinDev Mobile enables you to manage the Today Screens natively.

Control Centers

To optimize the management of your development projects, WinDev Mobile gives you the ability to use Control Centers. The different Control Centers allow you to:

- Manage the requirements of a project,
- Manage the monitoring of a project,
- Manage the bugs and the evolutions requested by the users on a project.

The Control Centers use a database (HyperFileSQL Classic or Client/Server). This database is shared among the different tools available in WinDev Mobile:



When installing WinDev Mobile, the setup program proposes:

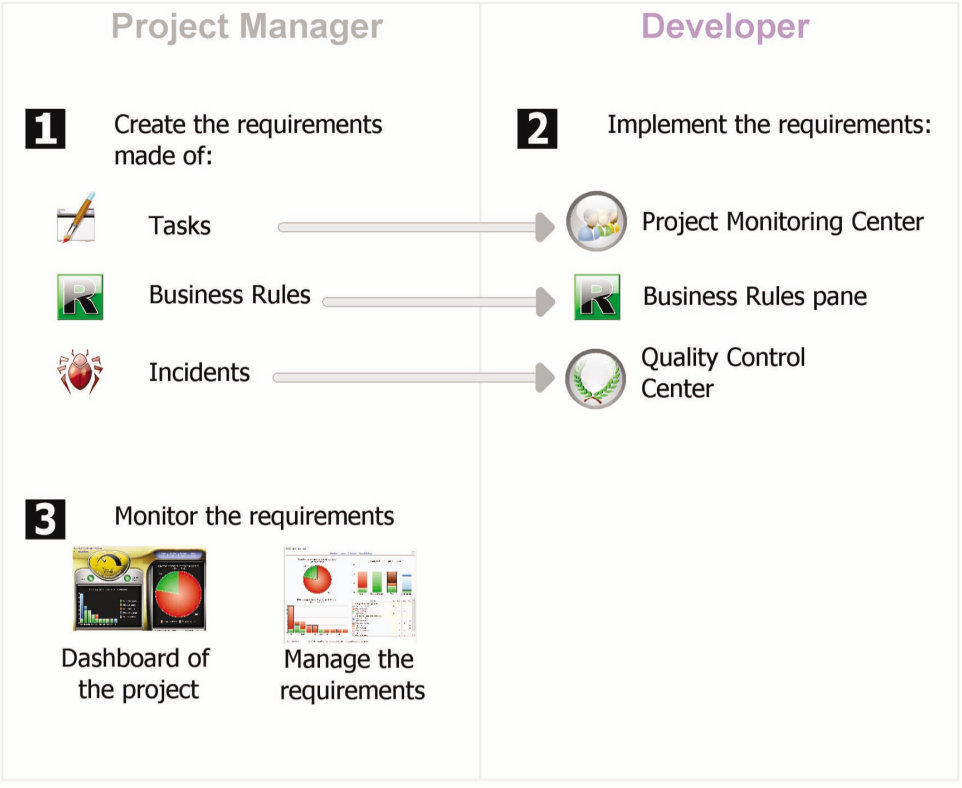
- to create the Control Centers database. This database will be automatically created in HyperFileSQL Classic format in the specified directory.
- to share an existing Control Centers database.

Managing the requirements

The Control Centers allow the project manager to manage a development project. To do so, you must:

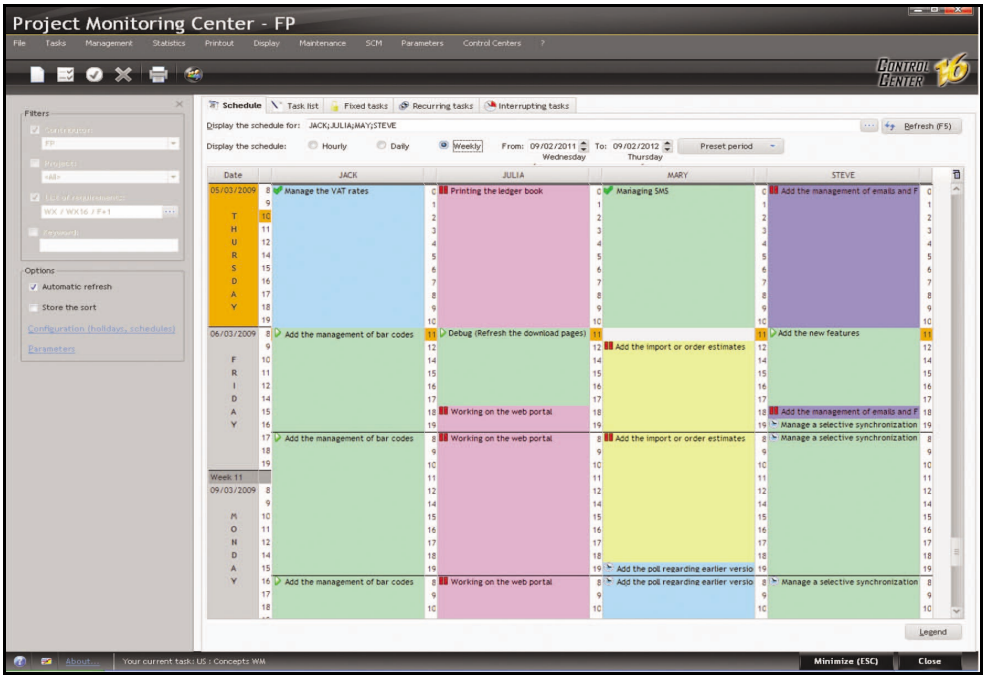
- define the different contributors of the project.
- Define the requirements (with the different elements associated with them).

Each developer performs the different tasks assigned to him.
The project manager can follow the progress status of the project at any time.



Project Monitoring Center

The Project Monitoring Center allows the different contributors of a project to manage their task schedule. These tasks can be linked to requirements and they can correspond to several projects.



Operating mode of the Project Monitoring Center

Once all the project tasks have been defined, the Project Monitoring Center takes care of everything. Entering the time spent on a task is almost automatic, it requires no specific action and it generates no particular constraint.

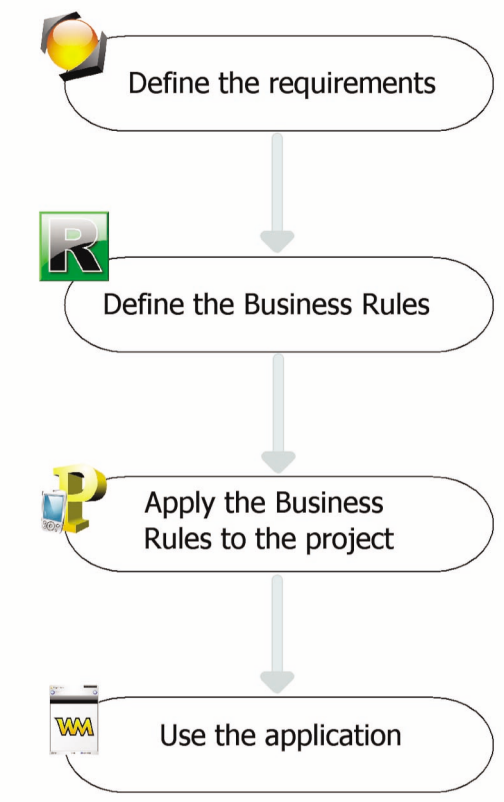
When the relevant project is opened, the Project Monitoring Center requests or indicates the current task. As soon as a task is completed, all you have to do is indicate that this task is over and specify the new task.

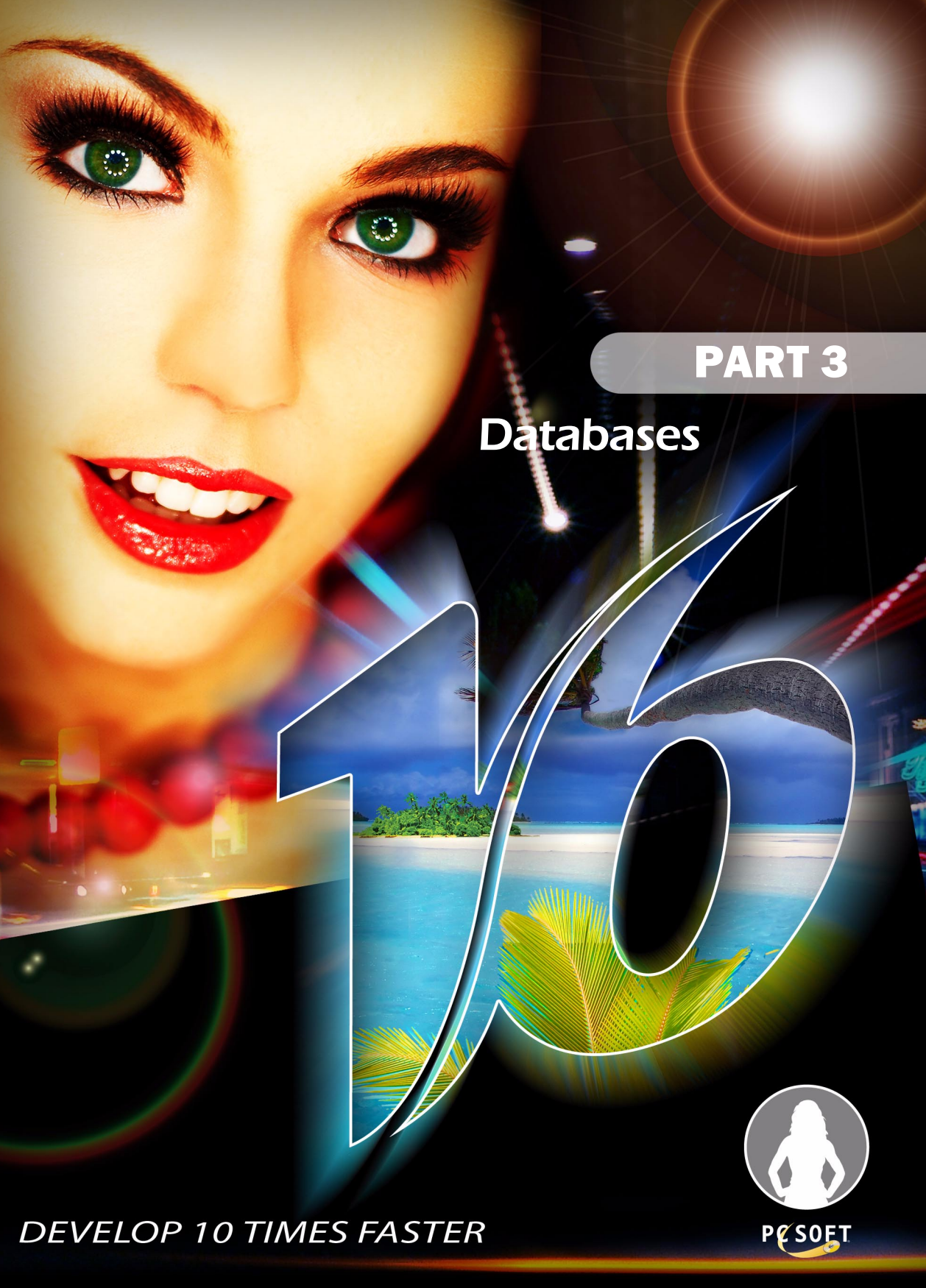
A task can be linked to a project element (window, report, ...). Whenever the relevant element is opened, the time spent on this element is counted and stored in the monitoring center. Conversely, the element corresponding to the task that you want to perform can be automatically opened from the task list.

Each developer can also view his own task list in the "Project Monitoring Center" pane.

Managing the business rules

WinDev Mobile allows you to manage some business rules. A business rule is used to define a specific operating mode or a specific 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 sales commission, a discount rate, a decay coefficient, ...
A business rule can be simple or complex.
The business rules can come from the specifications (corresponding to the requirements).

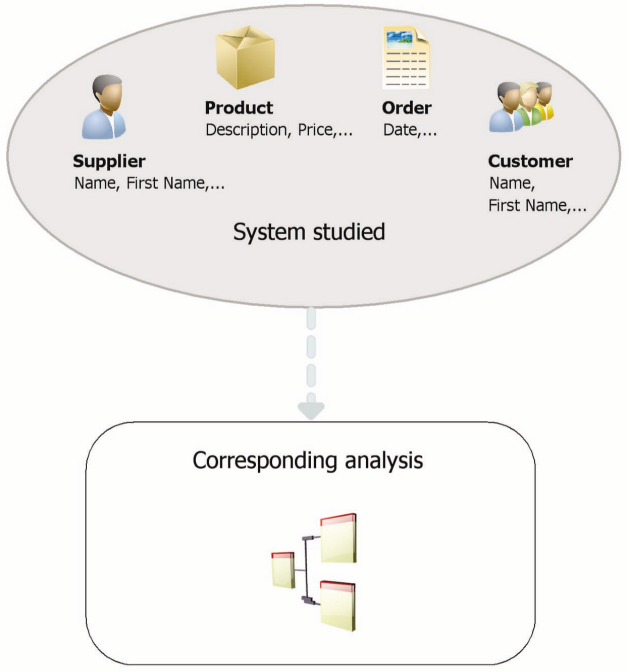



PART 3
Databases
10
DEVELOP 10 TIMES FASTER
PC SOFT

Analysis: database structure

When data files are used by a WinDev, WebDev or WinDev Mobile project, this project must be associated with an analysis. An analysis is used to describe the structures of the data (files, items, ...) used in your project.

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



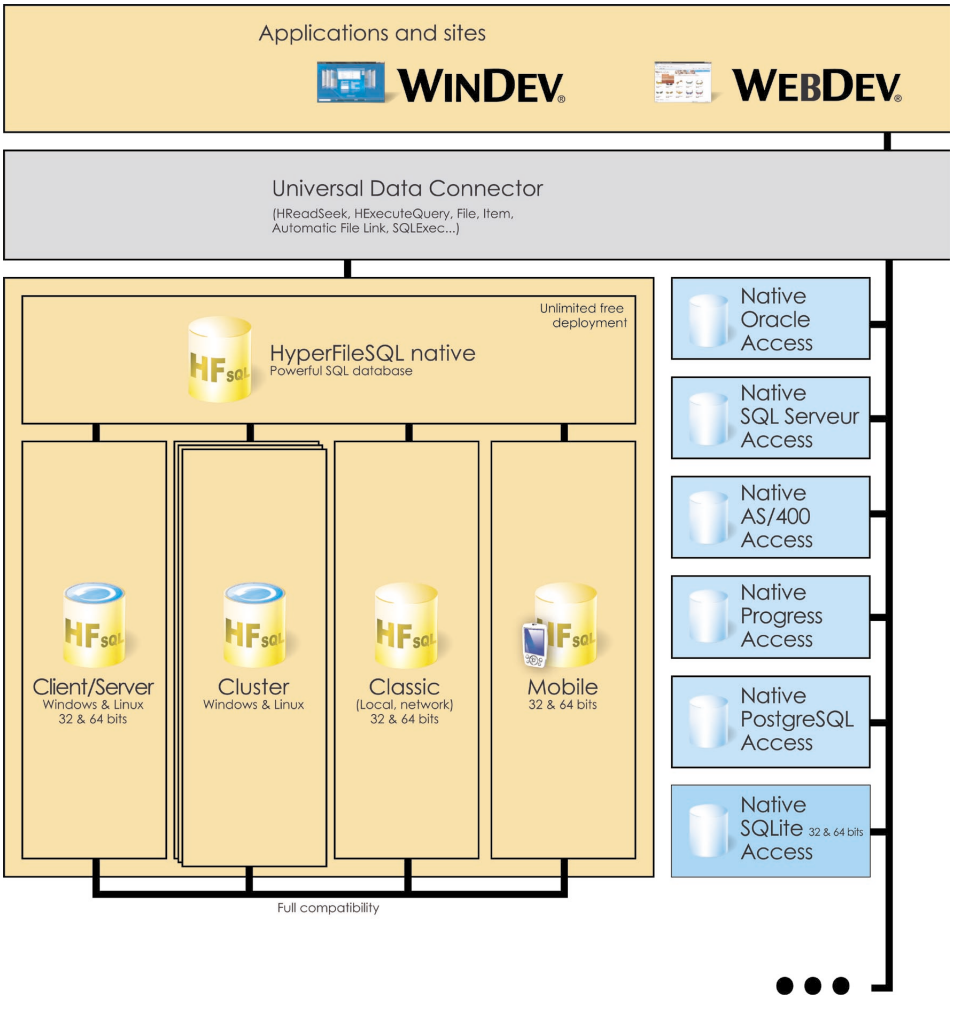
The analysis of a WinDev Mobile project corresponds to the LDM (Logical Data Model). The entire structure and data organization are described: the data is grouped by file. Each file contains several pieces of data called item.

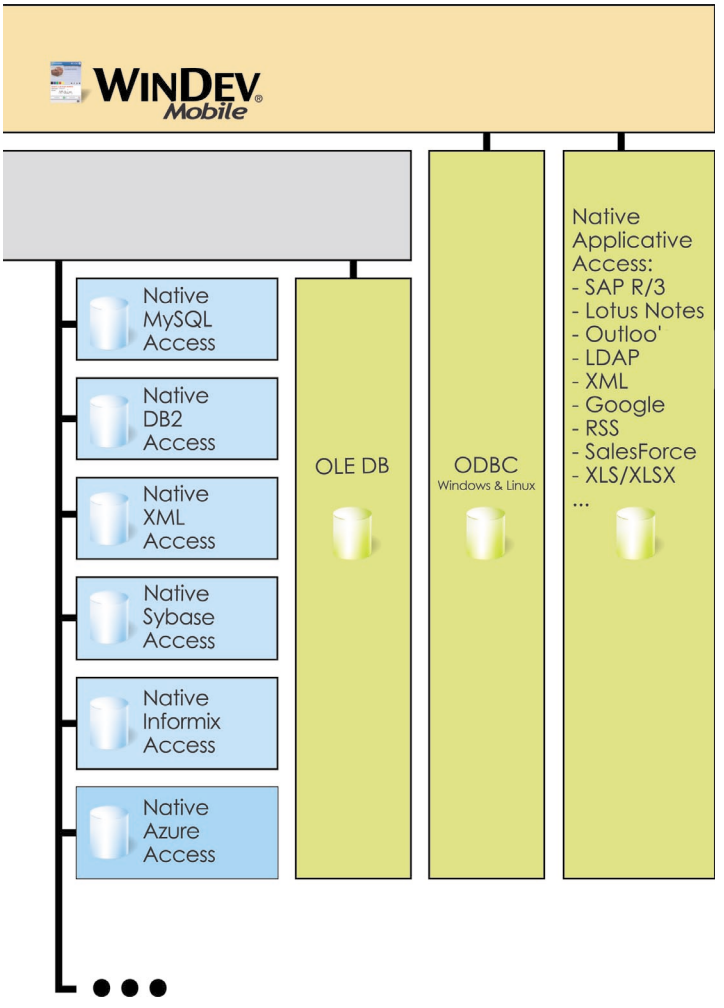
In the analysis, the description of a file can be linked to a type of file (HyperFileSQL Mobile, Oracle Lite, ...).

On the Android platform, the only available database is SQLite.

The different types of accessible files

WebDev, WinDev and WinDev Mobile propose a simple access to most of the databases on the market.



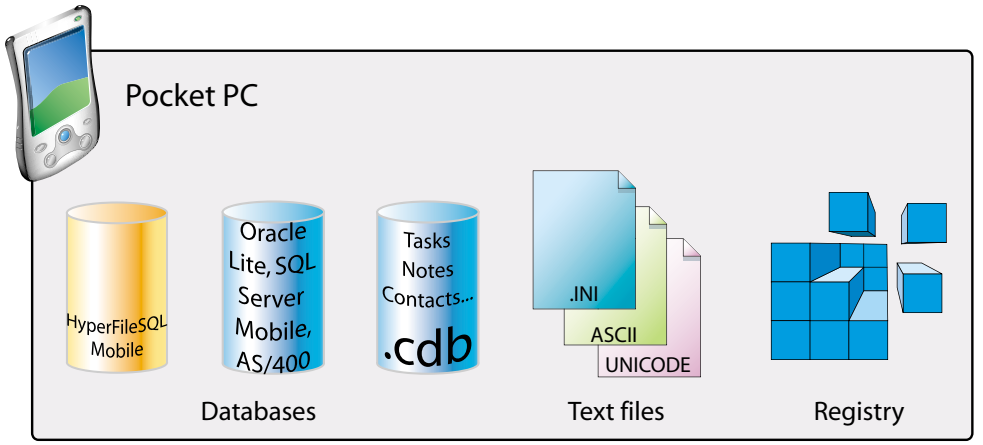

WINDEV Mobile
Native MySQL Access
Native DB2 Access
Native XML Access
Native Sybase Access
Native Informix Access
Native Azure Access
OLE DB
ODBC
Windows & Linux
Native Applicative Access:
- SAP R/3
- Lotus Notes
- Outloo'
- LDAP
- XML
- Google
- RSS
- SalesForce
- XLS/XLSX
...

Data handled by a WinDev Mobile application

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

- a HyperFileSQL Mobile or HyperFileSQL Client/Server database (".Fic" files).
- an external database (Oracle Lite, AS/400 or SQL Server Mobile).
- a CEDB database (".cdb" files).
- ".INI" files.
- text files (in ANSI or UNICODE format).
- the registry.

Note: On the Android platform:
- the only available database is SQLite.
- there is no registry.



HyperFileSQL Mobile

Windows Mobile

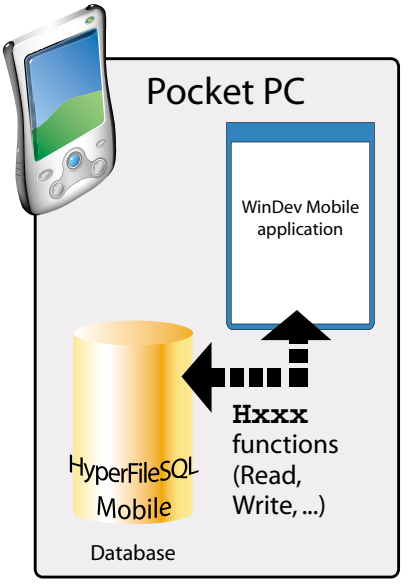
The HyperFileSQL Mobile format is the database format supplied with WinDev Mobile. This database format is compatible with WinDev, WinDev Mobile and WebDev.
It is a freely distributable Relational DBMS.

This format is identical to the HyperFileSQL format of WinDev and WebDev (".WDD" file, data files, ...).
However, the available size being limited on the mobile devices and the Windows Mobile operating system being also limited, the following features are not supported by HyperFileSQL Mobile in Classic mode:

- the transactions.
- the log process.
- the management of file locks and record locks.
- the management of files in Hyper File 5.5 format.

Handling a HyperFileSQL Mobile database from the mobile device

A HyperFileSQL Mobile database corresponds to a set of ".FIC", ".NDX" and ".MMO" files. Each data file can be handled by a WinDev Mobile application. These operations are performed via the HyperFileSQL functions (***Hxxx*** functions).



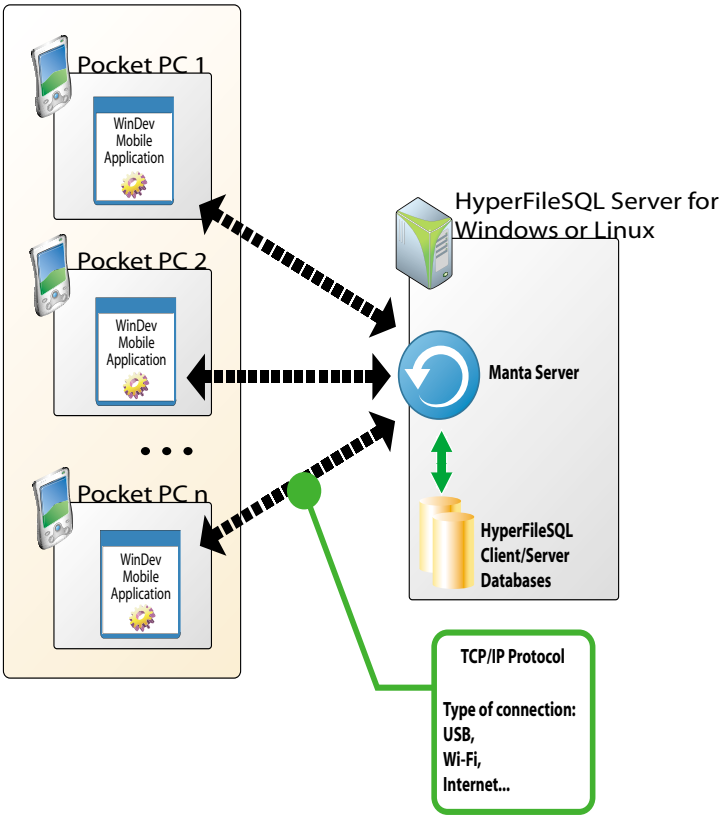
HyperFileSQL Client/Server

Windows Mobile

A WinDev Mobile HyperFileSQL application can also operate in Client/Server mode.

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

- A HyperFileSQL Client/Server application is run on different mobile devices (called client computers).
- The data files are found on a server. Only the server physically accesses the data files.
- All the processes (query, read/add operation in a file, ...) are performed on the server.

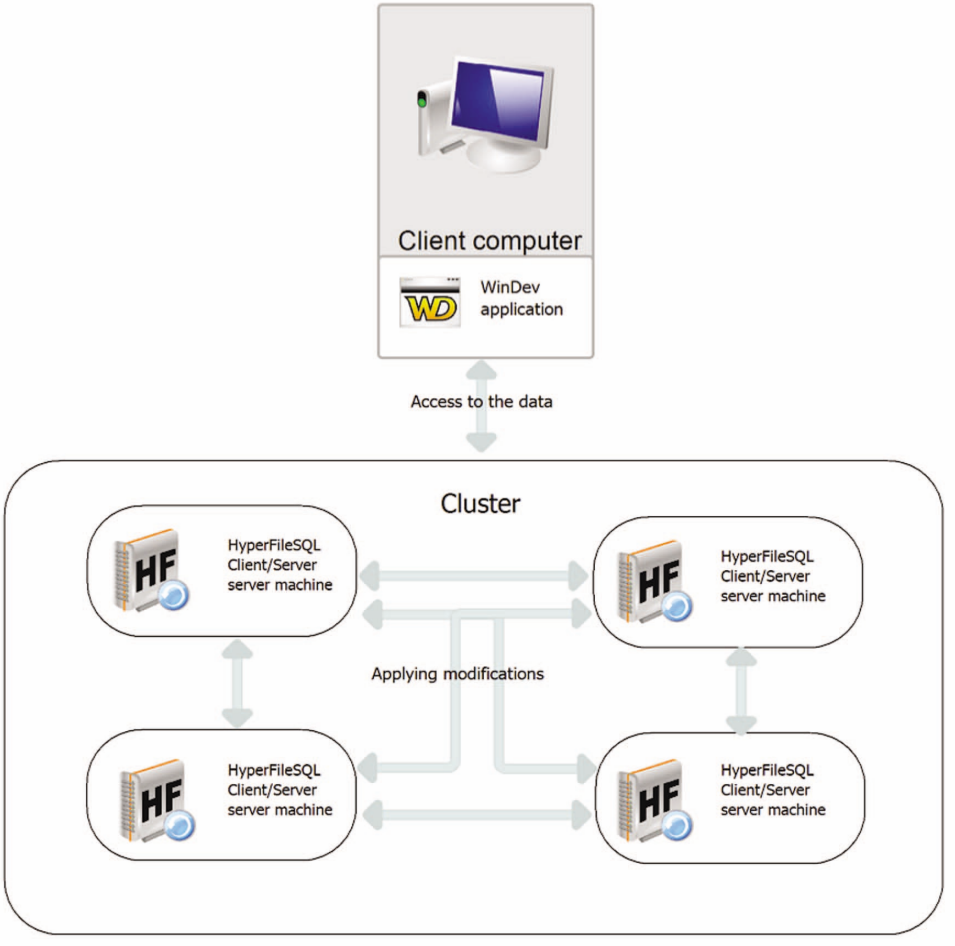


HyperFileSQL Cluster

Windows Mobile

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

- The read load can be balanced among the different servers.
- The physical configuration can evolve without any interruption for the client computers.
- If one of the servers crashes, the client is automatically redirected to an operating server.

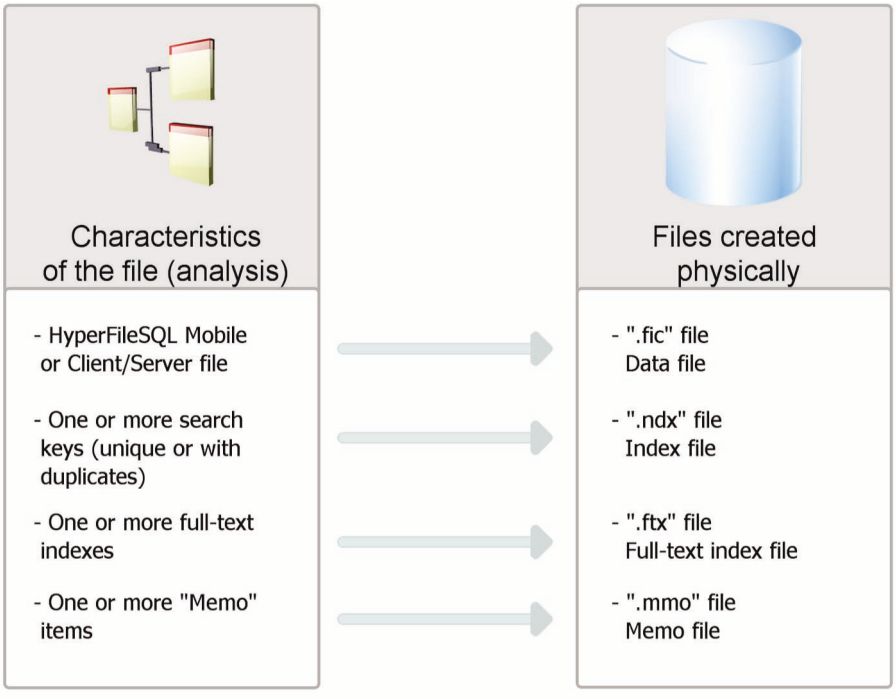


Creating HyperFileSQL files: the physically created files

Windows Mobile

The data model editor is used to describe the structure of the data files.

Depending on the information entered in the data model editor, different files are created physically.



Standard CEDB database

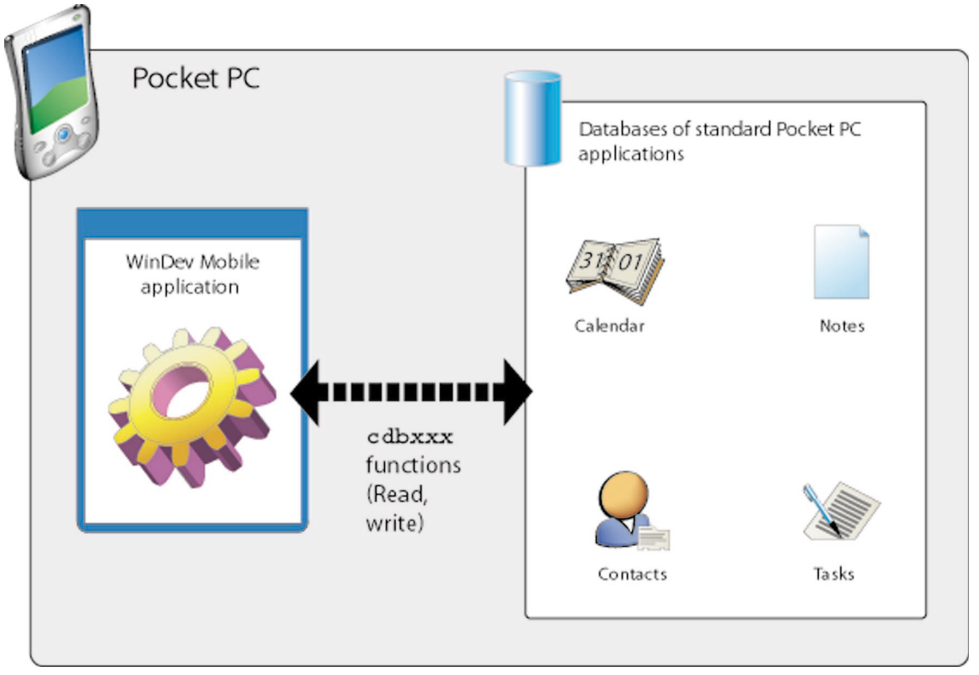
Windows Mobile

The standard Pocket PC applications

The Pocket PCs are supplied with a set of standard applications that handle the standard CEDB databases.

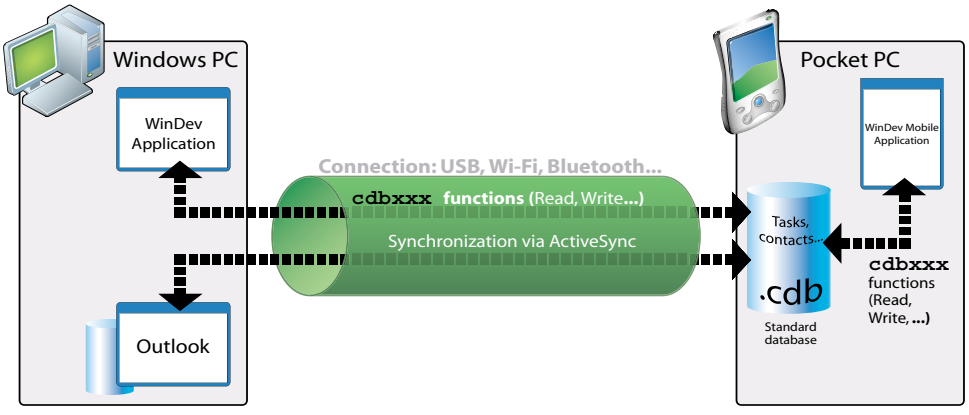
These databases correspond to the databases found by default on the Pocket PC. These databases contain the "Tasks", "Contacts" and "Calendar" data files, ...

These databases can be handled by a WinDev Mobile application.



Handling a standard database of Pocket PC (from a PC)

A standard database (containing the data files for managing tasks, contacts, ...) is found on the Pocket PC. This database can be handled by a WinDev Mobile application.
If you own WinDev, you also have the ability to create a WinDev application used to directly handle this standard Pocket PC database.
These operations are performed via the ***cdbXXX*** functions.
The synchronization between the database of Pocket PC and the data viewed via Outlook is performed by ActiveSync.



Note: To handle a Pocket PC database from a standard WinDev application, the Windows PC must be connected to the Pocket PC (***ceConnect***).

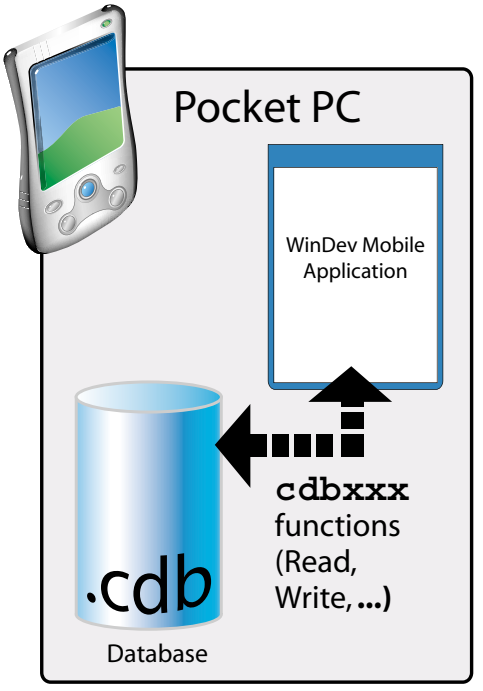
Handling Custom CEDB Databases

CEDB database

The custom CEDB databases correspond to Access databases (".MDB" file) previously exported from a PC.
When an Access database (".MDB" file) is copied to a Pocket PC from the file explorer, this database is automatically changed into a CEDB database (".CDB" file).

Handling a Pocket PC database (CEDB) from the Pocket PC

A CEDB database can be handled by a WinDev Mobile application. These operations are performed via the ***cdbXXX*** functions.



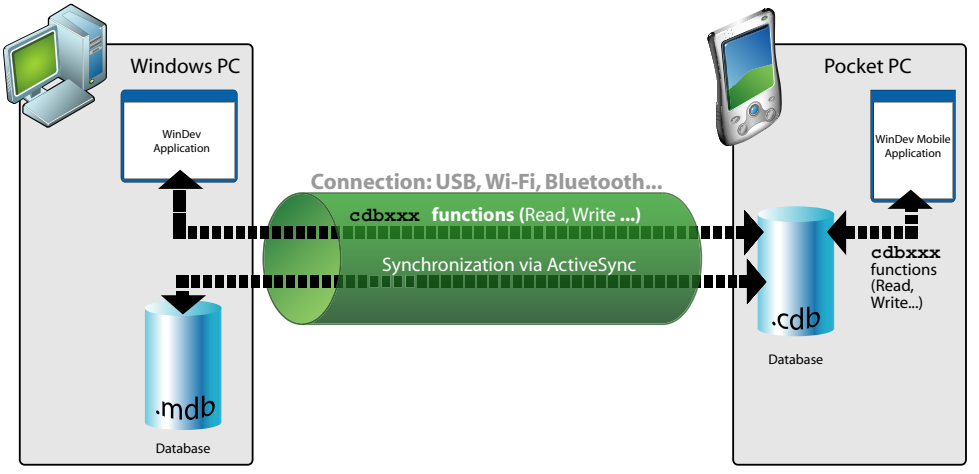
Handling a Pocket PC database (CEDB) from the Windows PC

If you own WinDev, you also have the ability to create a WinDev application used to directly handle a CEDB database found on the Pocket PC. These operations are also performed via the ***cdbXXX*** functions.

Note: To handle a Pocket PC database from a standard WinDev application, the Windows PC must be connected to the Pocket PC (***ceConnect***).

Synchronizing a Pocket PC database (CEDB) with an Access database

An Access database (".MDB" file) is found on the Windows PC. This database is exported to the Pocket PC: ActiveSync automatically transforms it into a Pocket PC database (".CDB" file).
This Pocket PC database can be handled by a WinDev Mobile application.
If you own WinDev, you also have the ability to create a WinDev application to handle the Pocket PC database.
These operations are performed via the ***cdbXXX*** functions. The synchronization between the Pocket PC database and the Access database is performed by ActiveSync.



Notes:

- To handle a Pocket PC database from a standard WinDev application, a connection must be established between the Windows PC and the Pocket PC (***ceConnect***).
- The standard WinDev application can also handle the Access database via Native Access.
- **From Windows Vista**, the "ActiveSync" program has been replaced by the "Manager for Windows Mobile devices".

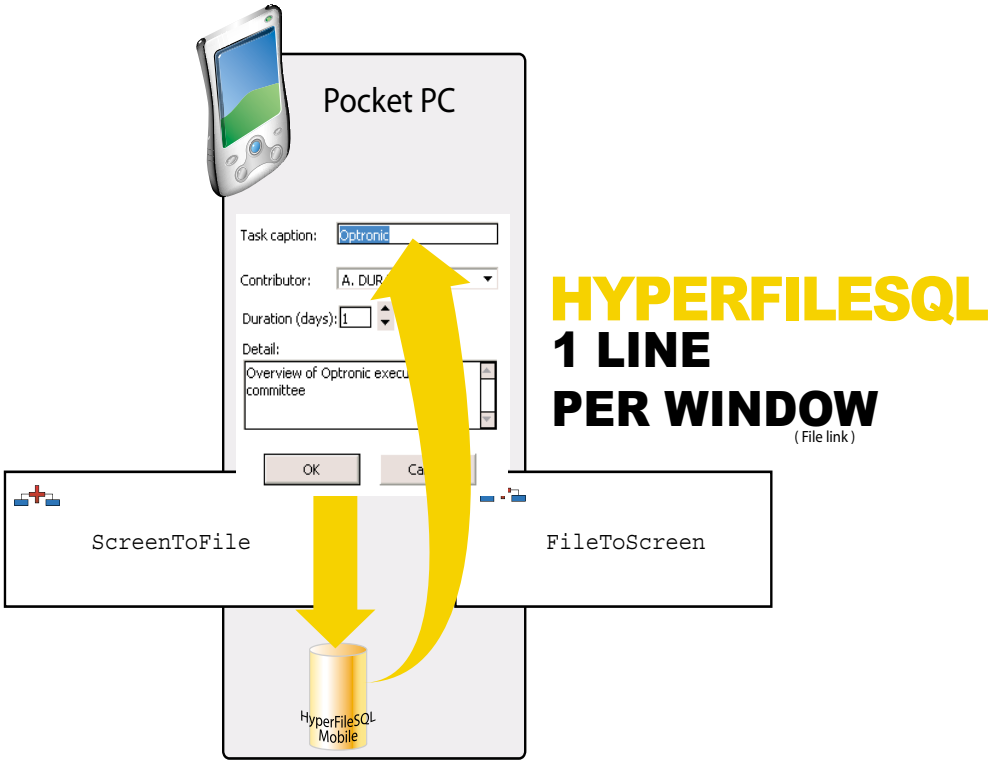
Comparison between HyperFileSQL Mobile and CEDB

The CEDB databases only concern the applications that operate in Windows Mobile.

To display some information coming from a database in a window, the controls of this window must be linked to the different items of the database.
The method for displaying and retrieving the information depends on the database used (HyperFileSQL Mobile or CEDB).

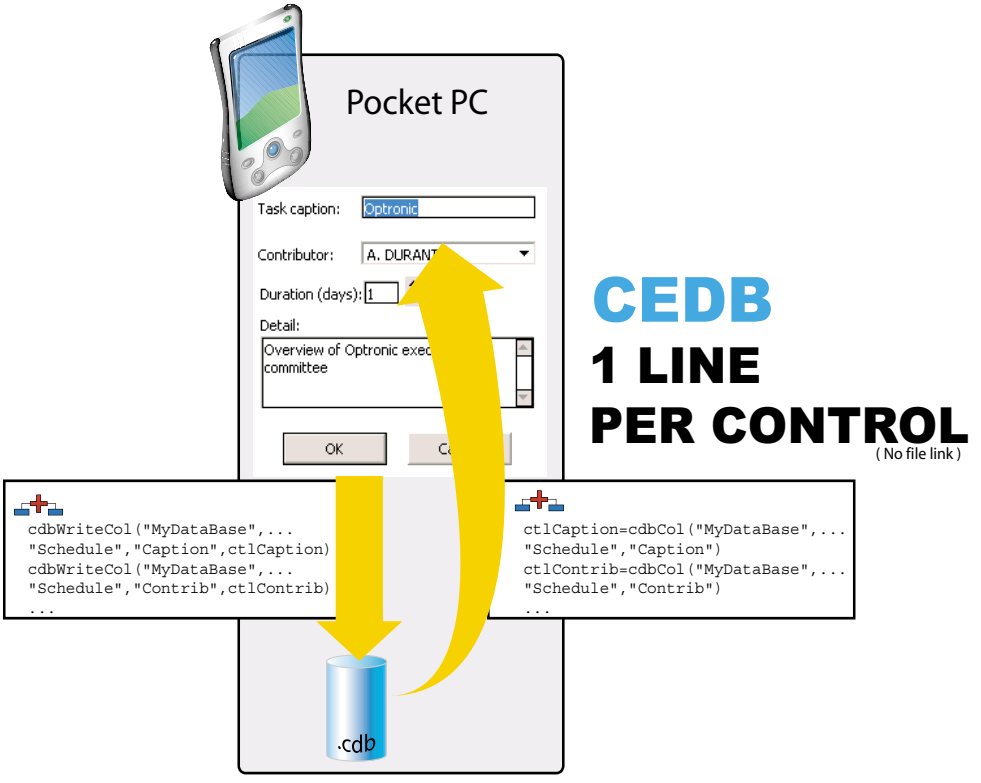
File link between a window and a HyperFileSQL Mobile database

In most cases, the link between a control and an item is defined in the window editor when describing the control ("File" tab). This link enables you to specify the file item that will be used by ***ScreenToFile*** and ***FileToScreen***.



File link between a window and a Pocket PC database (CEDB)

This link must be defined by programming (***cdbXXX*** functions).



Other differences

The use of HyperFileSQL Mobile databases enables you to access the following features (non-exhaustive list):

- Speed of the HyperFileSQL Mobile database.
- Queries on the HyperFileSQL Mobile databases (created in the query editor).
- Fast application development via Full Application RAD.
- Features specific to the HyperFileSQL Mobile database (encryption, and so on)

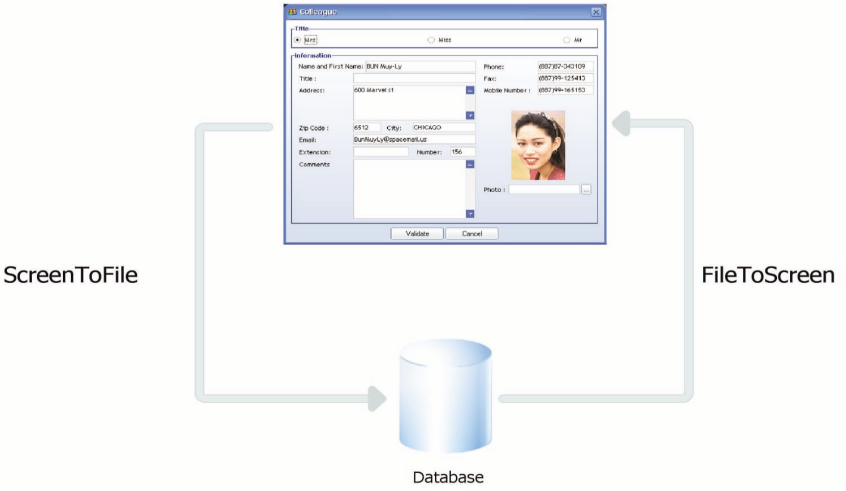
Associate the controls with the data

A window can display information coming from:
- a database: the controls are directly linked to the items of the files or queries available in the database.
- variables found in the code of the application (variables global to the window or to the project or parameters passed to the window).

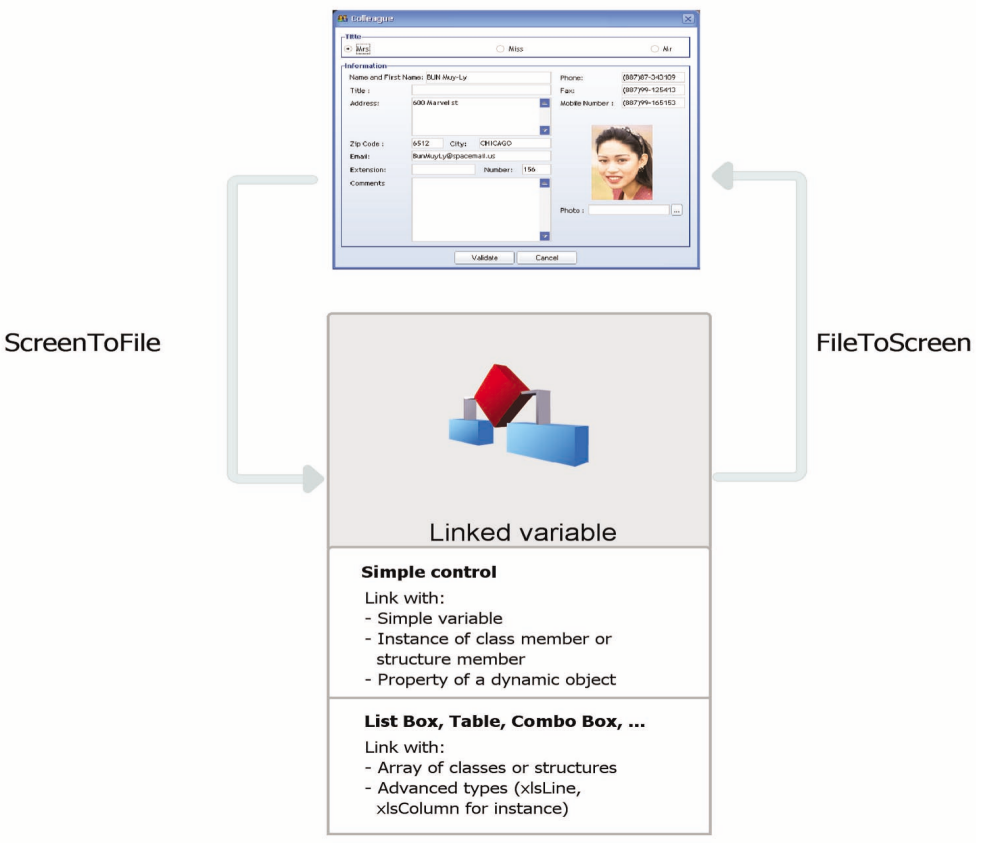
To display this information in a window, the controls of this window must be linked to:
- the different items of the database.
- the available WLanguage variables.

The method for displaying and retrieving the information is straightforward:
- The link between a control and an item or a variable is defined in the window editor, when describing the control ("Link" tab).
- ***ScreenToFile*** is used to update the record or the variable with the data displayed on the screen.
- ***FileToScreen*** is used to update the data displayed on the screen with the information saved in the file or with the information saved in the variable.

Link between control and item



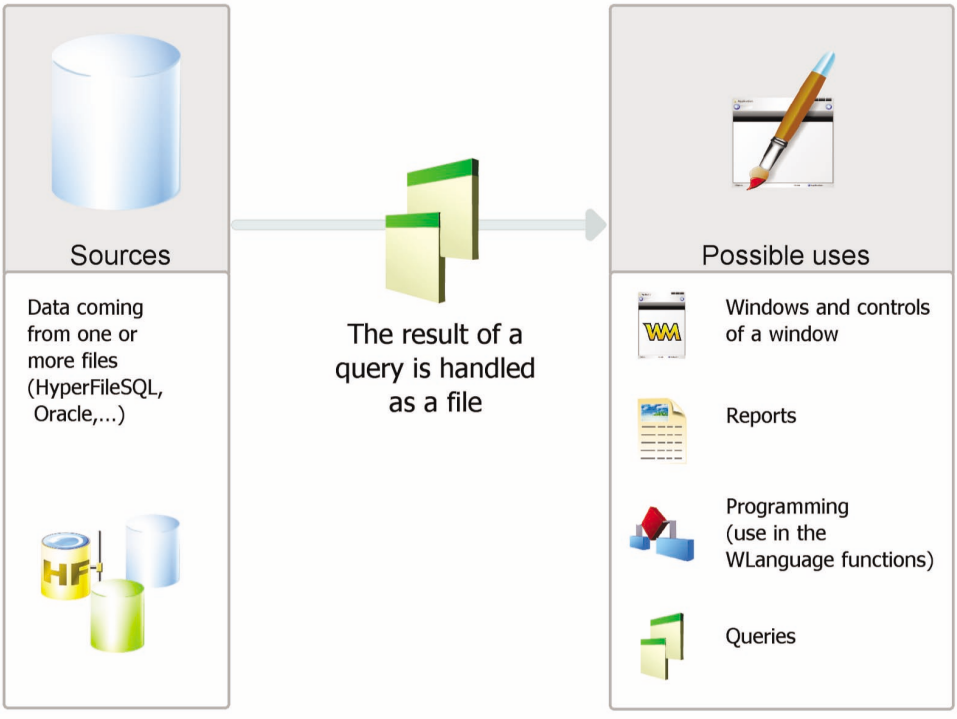
Link between control and variable



Note: The control/variable link is not available for the Android applications.

Queries

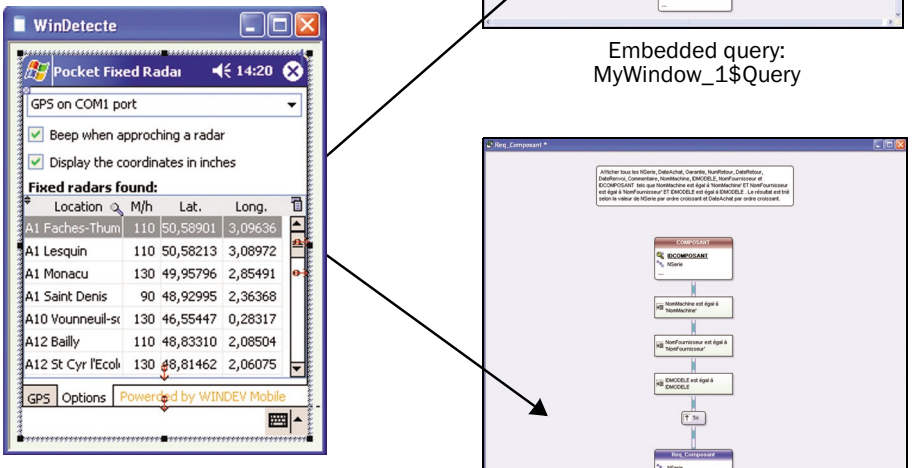
A query is used to interrogate a database in order to view, insert, modify or delete data.
The structure of the query defines the data used.
A query can interrogate one or more files.
The query editor is used to easily create queries, without programming.



Note: in programing, a query can be handled the same way as a file. Especially, it can be associated with a display control (a table for example) that will present the data returned by the query.

Embedded queries

The controls found in a window can be linked to a data file or to an existing query, ... These controls can also be linked to a query created when the control was designed.



Embedded query:
MyWindow_1$Query

Embedded query:
MyWindow_2$Query

In this case, the query is included in the window. It is found in the WPW file corresponding to the window. If the WPW file is copied (into another project for example), the embedded queries used by this window will also be copied.

Table/Looper controls

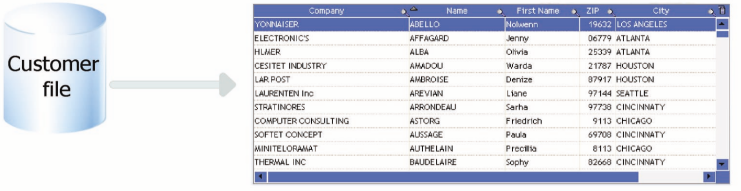
The Table/Looper controls can be used to display a set of information (the content of a data file for example). The content of these controls can come from different sources:

- "Direct access file" table/looper
- "Memory" table/looper
- "File loaded in memory" table/looper

Note: These three fill modes will be presented in details for the Table control. The same concepts apply to the Looper control.

"Direct access file" table

A browsing table with direct access is used to directly display the data coming from a data file, a query or an array variable. Browsing the file is used to display the data in the table. The file is read for each row displayed: the record read is displayed in a table row.



The data displayed that is not linked to the file is not kept when displaying the row (value of a check box column for instance).
The WLanguage functions starting with "Table" are used to handle the browsing tables with direct access. The addition or the deletion of a table row involves the addition or the deletion of the record in the linked file.

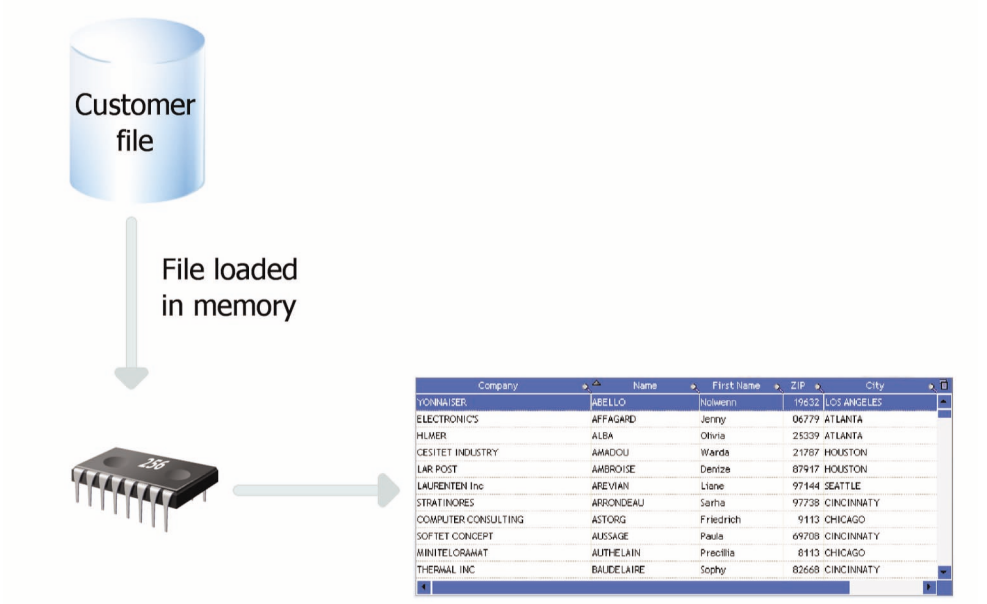
"Memory" table

A memory table is used to directly display the data loaded in memory. The data is added to the table by programming (with ***TableAddLine*** for instance).

Since the data is found in memory, the table allows you to perform all the operations on the data (sort on any column, search performed in the columns, ...).

"Browsing table loaded in memory"

The browsing tables loaded in memory combine the benefits of the browsing tables and the benefits of the memory tables.
The table is linked to the data file but the content of the file is entirely loaded in memory.
Sorting and searching is available on all the columns.
The data not linked to the file is kept when handling the scrollbar (Check box column for instance).
Since the file records are loaded in memory, this type of table is recommended for files containing less than 100,000 records (to avoid saturating the memory).



Notes:
These different fill modes are also available for list boxes and for combo boxes.

The Table control is not available in Android applications. Only the Looper control can be used.

Synchronizing the data

Windows Mobile

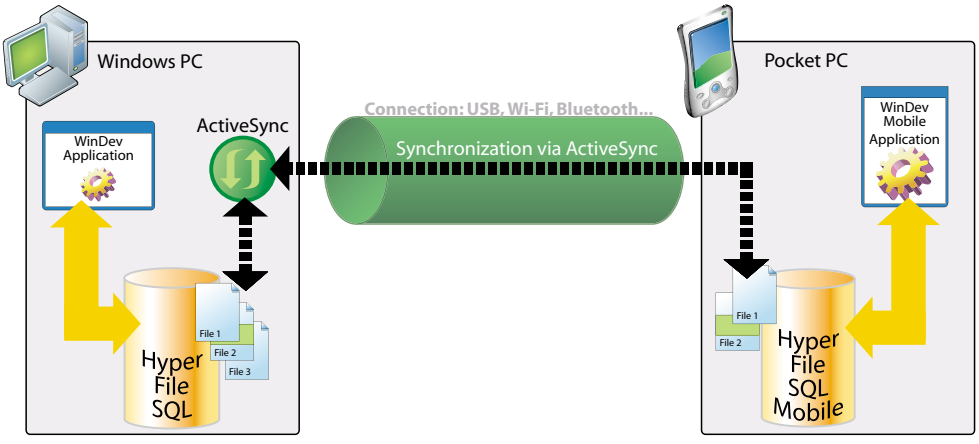
WinDev Mobile allows you to synchronize the records used by several applications.
The two applications manage the same data independently of each other. During the synchronization, the modifications made to the database handled by the PC are automatically applied to the Pocket PC (and conversely).
This synchronization is automatically performed by:

- **ActiveSync** when the Pocket PC is connected to the Windows PC. **From Windows Vista, "ActiveSync" has been replaced by the "Manager for Windows Mobile devices".**
- the **Universal Replication** when the Pocket PC is connected (or not) to the Windows PC.

ActiveSync (or the manager for Windows Mobile devices)

ActiveSync is used to update databases of same format used by both a standard WinDev application and a WinDev Mobile application.
The synchronization can be adapted to special cases. For instance, you have the ability to retrieve the records concerning a specified product or the records created at a given date, manage the conflicts, display a configuration window, ...
These changes must be done by programming in a set of procedures called "WDSynchro.wdg". This set of procedures is supplied with WinDev Mobile.

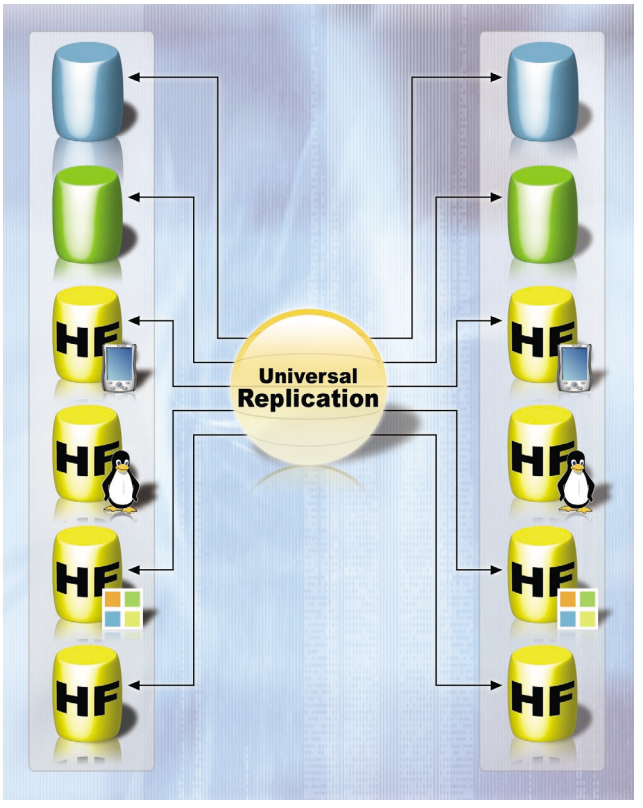
Note: No programming is required to perform a full synchronization.



Note: WDSynchro is used to configure ActiveSync in order to synchronize the HyperFileSQL database (PC) and the HyperFileSQL Mobile database (Pocket PC). This tool can be used on the development computer only.

Universal replication

The universal replication is used to update some databases of same format or some databases of different formats used by several applications. You can for instance perform a synchronization between a HyperFileSQL Mobile database and an Oracle Lite database.
The universal replication uses a centralized model: all the databases are synchronized with a master database. Then, the master database carries over the modifications to the other databases.



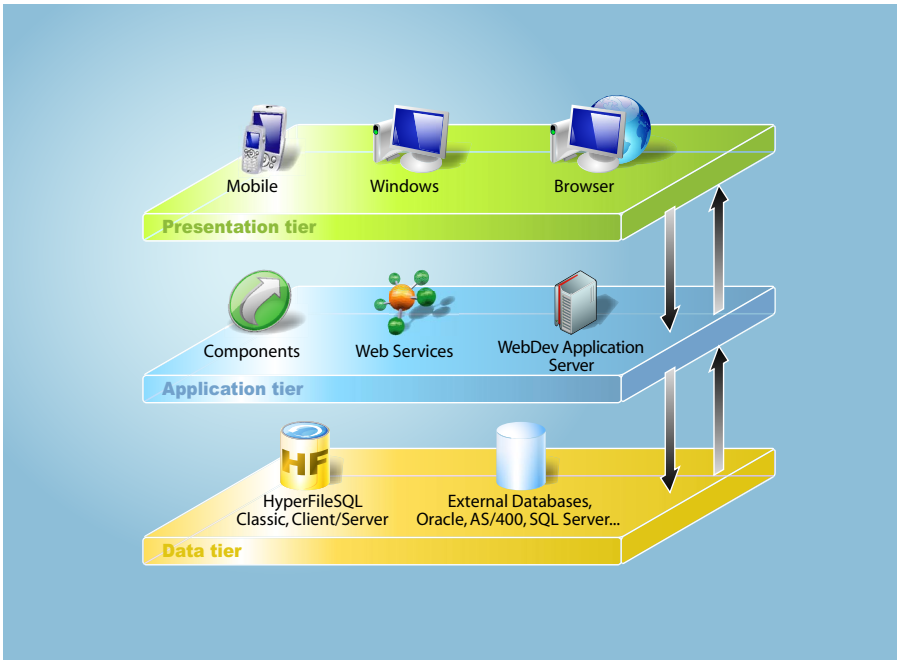
The synchronization can be adapted to special cases. For instance, you have the ability to retrieve the records concerning a specified product or the records created at a given date, manage the conflicts, display a configuration window, ...
These changes must be done by programming via ***HRplFilterProcedure***.

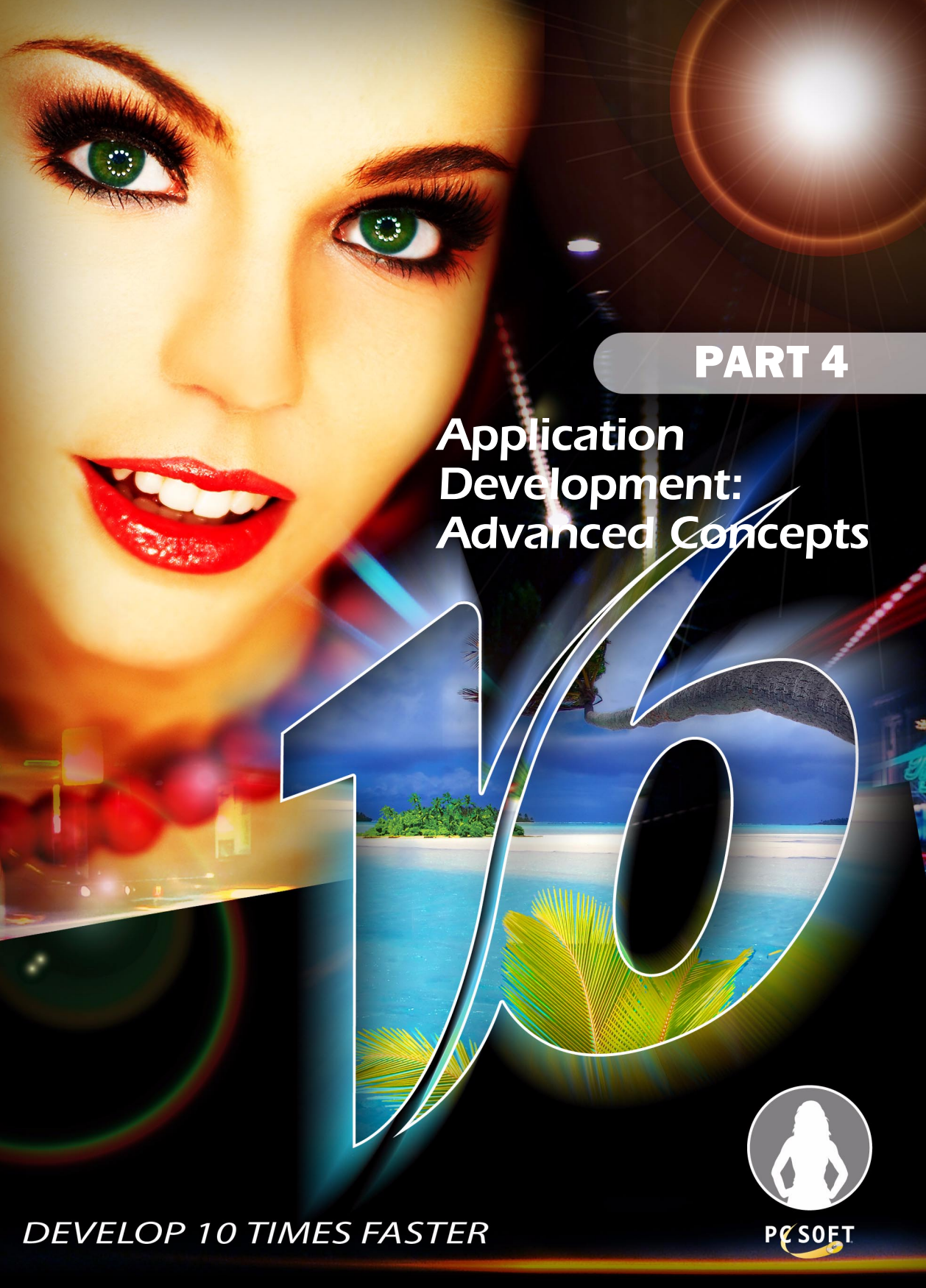
3-tier

The 3-tier architecture is designed to separate the 3 "tiers" of an application: UI, processes and data.
Therefore, an application will include 3 separate tiers:

- a presentation layer,
- an application layer,
- a data access layer.

The reason for separating them is to facilitate maintenance and future upgrades of the application. This ensures higher security because the access to the database is allowed via the process tier only. It also optimizes teamwork and multi-target development.




PART 4
Application Development: Advanced Concepts
10
DEVELOP 10 TIMES FASTER
PC SOFT

RAD/RID

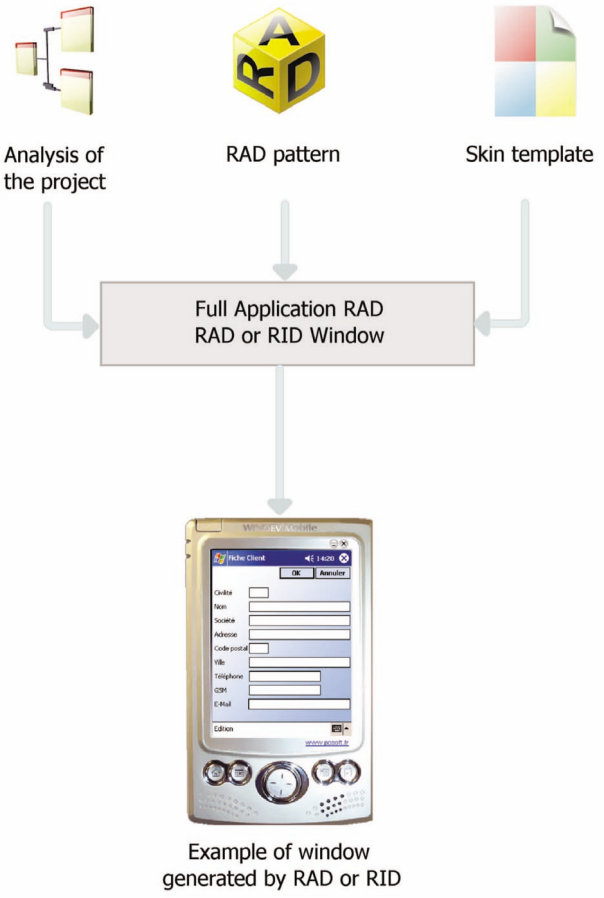
Windows Mobile

RAD (Rapid Application Development) and RID (Rapid graphical Interface Design) are used to create some windows from:

- the analysis linked to the project,
- standard or custom RAD patterns,
- skin templates.

In RAD generation, the generated windows contain the entire code required for them to operate. The test of these windows can be run immediately with the data found on the development computer.

In RID generation, the generated windows only contain the controls linked to the analysis items. The code required for these windows to operate must be written by the developer. Only the code required for the additional elements of the pattern to operate is added. Your custom code can be entered directly.

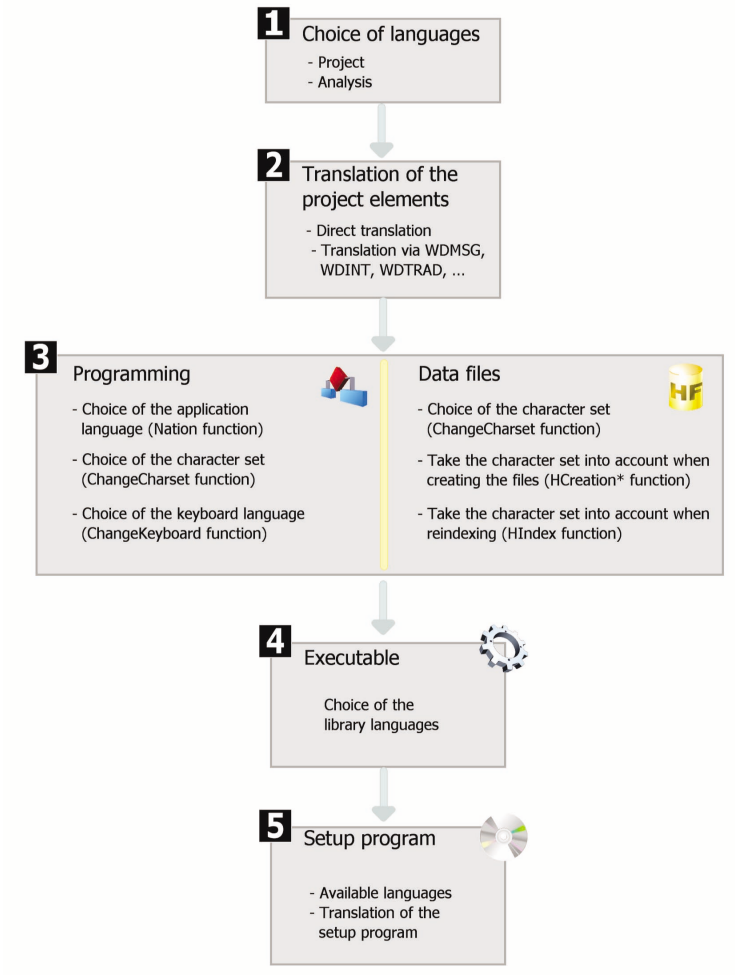


Example of window generated by RAD or RID

Multilingual application

A multilingual application is an application that can be distributed in several languages. WinDev Mobile takes into account the different languages of the application during the entire development of an application.

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



Test of a WinDev Mobile application

The test of the entire project is used to simulate the start of the application by the executable. This enables you to run the test of the entire application, even if its development is not finished yet.
Several types of project tests are available in WinDev Mobile:

- **Test on the development computer.** This test simulates a mobile device on the development computer. During this test, no connection to a device is required. This test allows the use of the debugger. However, this test being run on a PC and not on the real mobile device, the application may behave differently.

- **Direct test on the mobile device connected to the development computer**. In this case, the executable corresponding to the project is created, copied onto the Pocket PC and run. When the program is run on the Pocket PC, the Pocket PC can be disconnected from the PC. The debugger is not available.

- **Test and debug on the Pocket PC connected to the development computer**. This test allows the use of the debugger while being directly run on the Pocket PC.

- **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.

Debug modes

Two different modes are available for debugging a WinDev Mobile application:

Debugging in the simulator

This mode starts the application in a device simulator. However, the application is run by the PC itself in the Windows environment.
This debug mode is useful to quickly debug a new function or to test an algorithm but it presents some behavior differences with the real device:

- the paths of the files are those of Windows,
- by default, the character strings are in ANSI format and not in Unicode format,
- the functions specific to the mobile devices (SMS for example) are not available.

Debugging on the mobile device

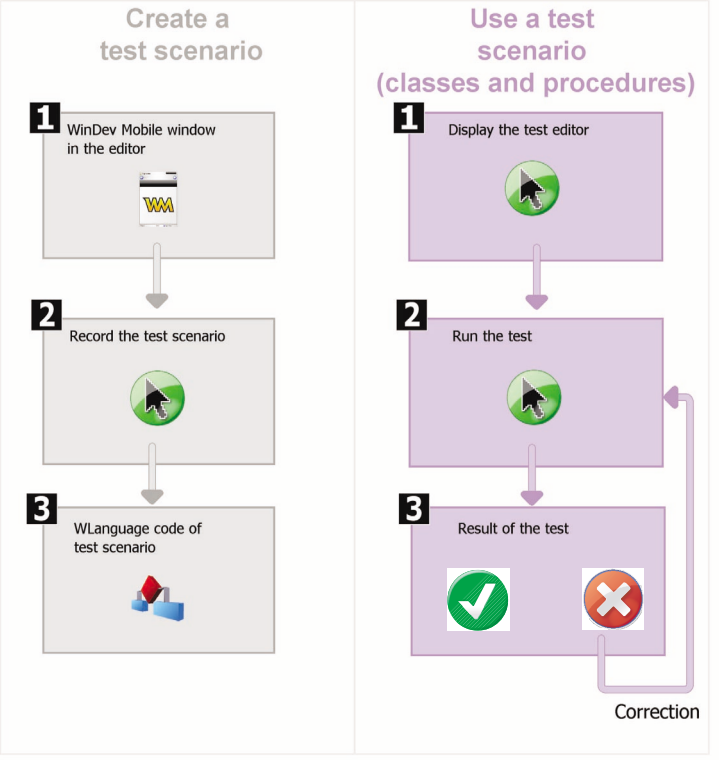
This debug mode allows an operating mode of the application that is closer to the real application as the debugger runs the application on the real mobile device. All the specific functions can be used (except for the ones that require some digitally signed executables).
This mode is slightly slower than the simulator. Indeed, it adds to the execution a communication phase between the development environment and the debugger found on the device.
This mode requires a mobile device connected to the development computer.

Unit tests

Windows Mobile

Unit tests (also called automated tests) are used to run the test of windows, procedures and classes found in an application during the entire development.
To do so, select (or create) the test scenario that will be run.
These scenarios are generated in WLanguage and they can be directly modified.
These scenarios are grouped in the test editor. The test editor analyzes the result of the unit tests and calculates the level of validation for the application.
When creating the application executable, WinDev Mobile:

- displays the validation level of the application.
- indicates the modified elements whose test was not run.

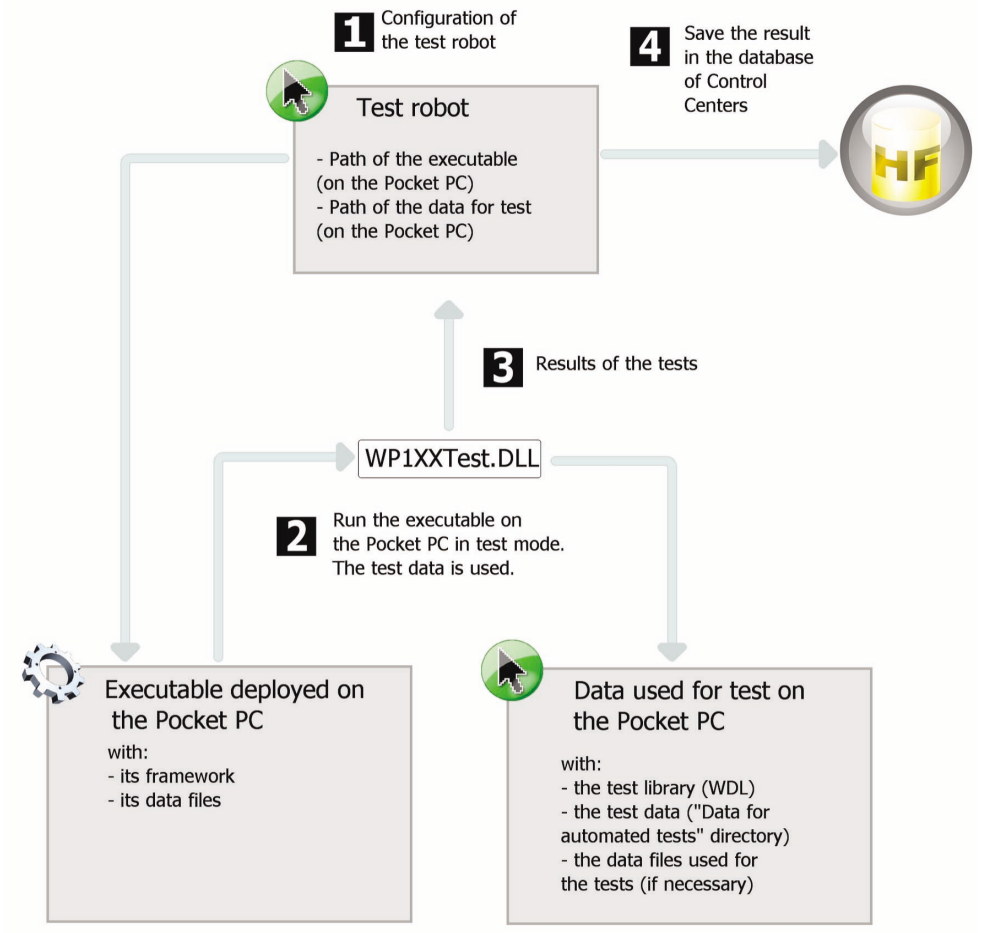


To create a unit test on the current window, click  .
To create a unit test on a procedure or on a class, select this procedure or this class in the "Project explorer" pane and select "Create a unit test" from the popup menu.

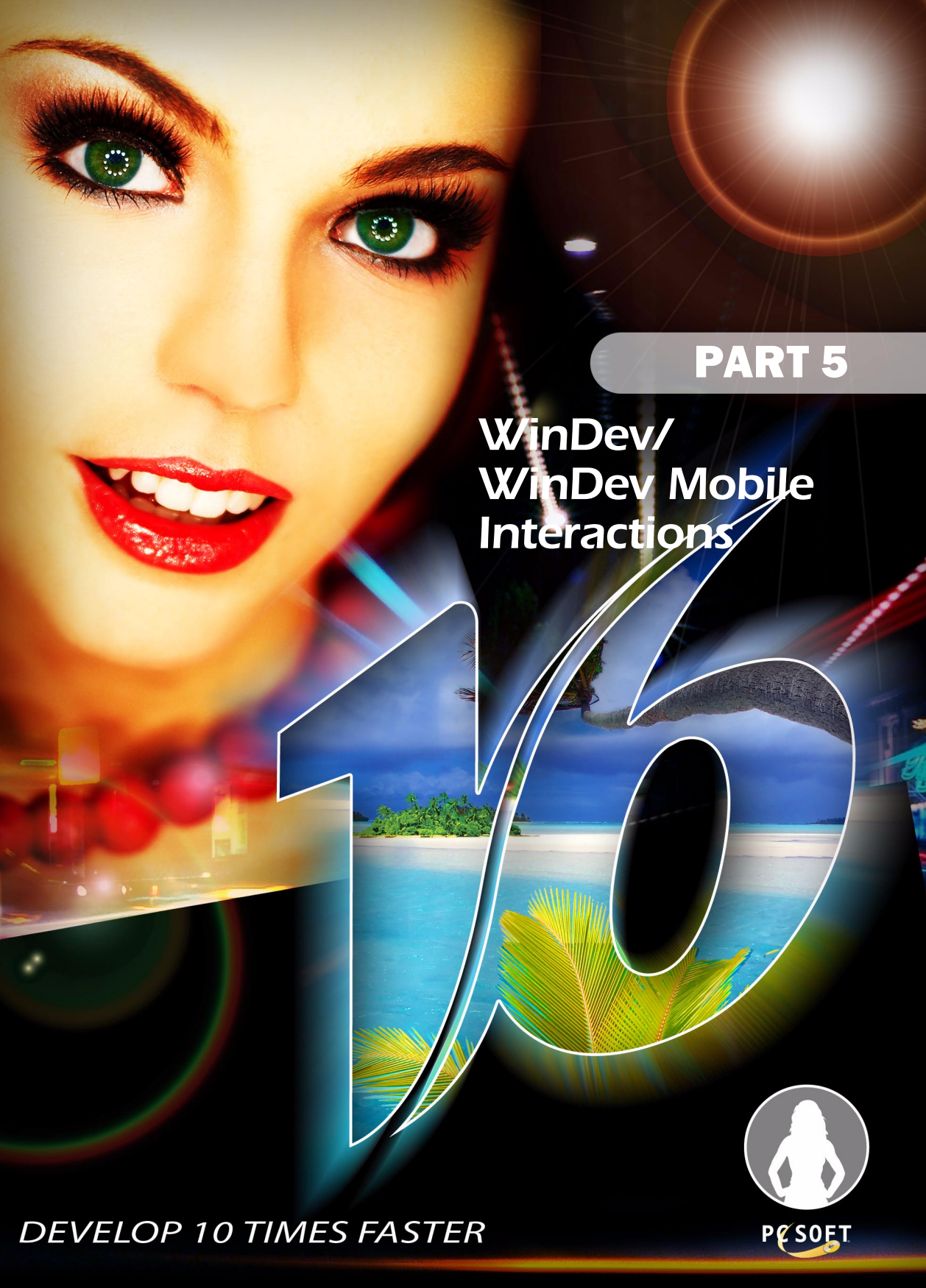
Unit tests on the executable

Windows Mobile

WinDev Mobile enables you to run some unit tests on the windows. However, these unit tests can only be run on the Pocket PC via the test robot. The test robot is used to run all the unit tests in real configuration on the Pocket PC.



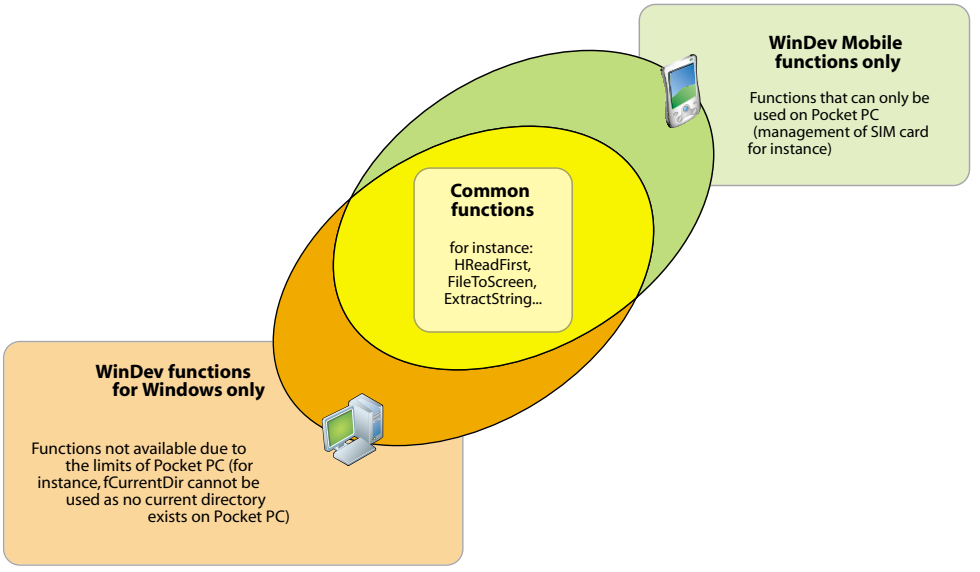
The test robot runs the executable deployed on the Pocket PC in "test mode", via "WP1XXTest.DLL". The test data (scenarios, test data files if necessary, ...) is automatically used.


PART 5
WinDev/
WinDev Mobile
Interactions
16
DEVELOP 10 TIMES FASTER
PC SOFT

WLanguage functions

Most of the WLanguage functions found in WinDev are also available in WinDev Mobile. These functions are common to the two products.
The functions specific to Windows are not available in WinDev Mobile because of the differences between Windows and Windows Mobile/Android.
On the contrary, some functions specific to Windows Mobile (or to Android) are only proposed with WinDev Mobile.

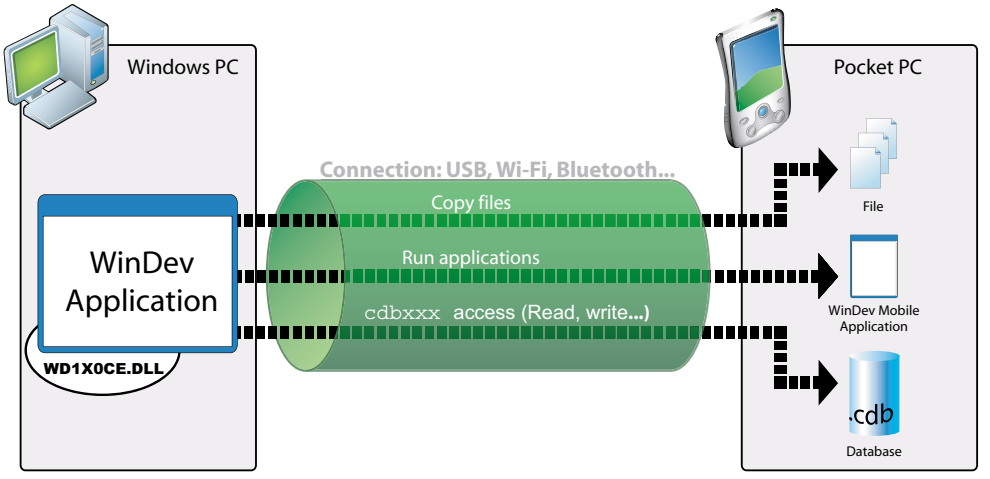
The following diagram presents some of the WLanguage functions that can be used according to the type of application developed:



Interaction with a standard WinDev application

Windows Mobile

The functions for accessing Pocket PCs are used to access the Pocket PCs from a standard WinDev application.



WinDev Mobile is supplied with several examples that use the functions for accessing the Pocket PCs:

- PC Registry.
- PC Explorer.

These examples can be used on a PC.

Handling the character strings

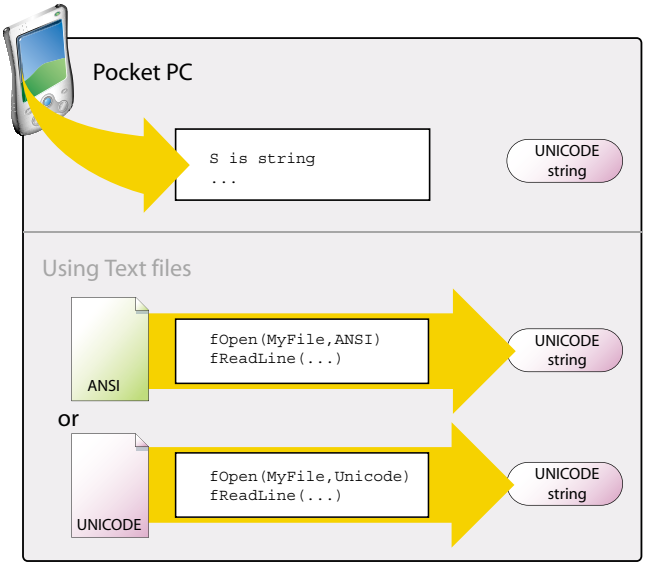
Different formats of character strings are available:

- **The UNICODE format** is used to describe a very large set of characters by representing each letter on several bytes. All the characters of the most common character sets are represented in a single set. Each character has a unique identifier. This format is used to simultaneously handle the characters issued from different character sets. The "Unicode" term does not define by itself the method for encoding the characters. Several "transformations" are available for encoding the texts among which the most common are UTF-8 and UTF-16.
- **The ANSI format** represents each character on one byte. This format can encode 256 characters in the Indo-European character sets. This format can represent all the character sets. However, a single character set can be used at a time.

Windows Mobile

Character strings in Windows Mobile

In most cases, the Windows Mobile applications handle the character strings in Unicode/UTF16 format. In this format, each character is encoded on 16 bits (2 bytes).



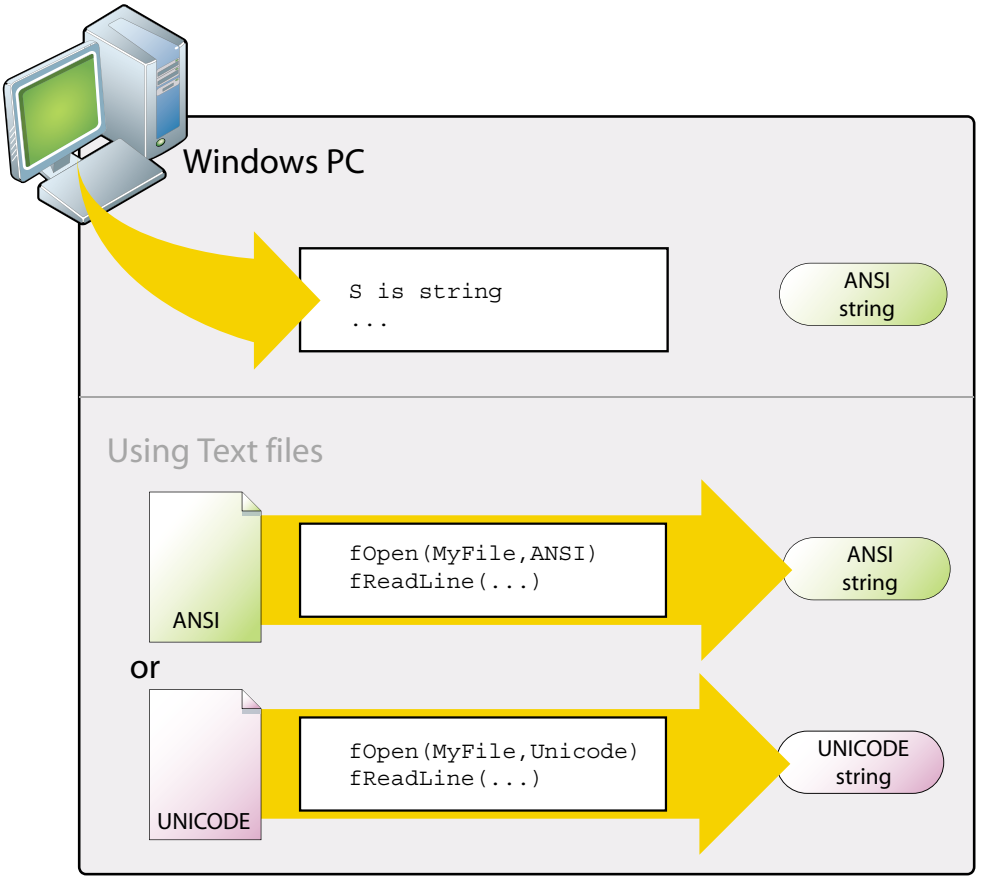
In Windows Mobile, when using text files containing character strings in ANSI format, WinDev Mobile automatically converts these character strings into Unicode/UTF-16 format. This conversion is performed even if the opening of this file in ANSI format is explicitly requested.
This conversion is completely transparent.

Character strings in Android

In Android, the character strings are handled in Unicode/UTF-8 format.

Reminder: Character string in Windows PC

The Windows applications for PC handle the character strings in ANSI format.
On a PC, the text files can be opened in ANSI format and in UNICODE format. No conversion is performed by default.



The character strings are programmed in the same way in WinDev and in WinDev Mobile (with very few exceptions). WinDev automatically performs the necessary conversions.

Handling a Windows Mobile device from a standard WinDev application

The following WLanguage functions are used to access the Windows Mobile devices connected to a PC from a standard WinDev application:

ceConnect	Connects the current computer to a Pocket PC
ceConnectionStatus	Enables you to find out the status of the connection between the current computer and a Pocket PC
ceCopyFile	Copies: - a file found on the current computer to the connected Pocket PC - a file found on the connected Pocket PC to the current computer - a file found on the connected Pocket PC to another directory in the Pocket PC
ceCreateShortcut	Creates a shortcut on the Pocket PC connected to the current computer
ceDeleteFile	Deletes a file from the Pocket PC connected to the current computer
ceDeleteShortcut	Deletes a shortcut that was previously created by ceCreateShortcut
ceDir	Searches for a file or for a directory on the Pocket PC connected to the current computer
ceDisconnect	Closes the connection between the current computer and the Pocket PC
ceFileDate	Returns or modifies the different dates associated with a file (creation, modification or access)
ceFileExist	Checks the existence of a file
ceFileSize	Returns the size (in bytes) of a file found on the Pocket PC connected to the current computer
ceFileTime	Returns or modifies the different times associated with a file (creation, modification or access)
ceListFile	Lists the files found in a directory (and in its sub-directories) and returns the number of listed files
ceMachineName	Returns the name of the Pocket PC
ceMakeDir	Creates a directory on the Pocket PC connected to the current computer
ceOEMInfo	Returns the OEM information of the Pocket PC: trademark, model, serial number, ...
cePlatform	Returns the name of the platform for the Pocket PC

cePowerStatus	Returns some information about the main or spare battery of the Pocket PC
ceProcessorType	Returns the type of processor for the Pocket PC connected to the current computer
ceRegistryCreateKey	Creates a key in the registry of Pocket PC
ceRegistryDeleteKey	Deletes a sub-key from the registry of the Pocket PC
ceRegistryDeleteValue	Deletes a value from the registry of the Pocket PC
ceRegistryExist	Checks the existence of a key in the Pocket PC registry
ceRegistryFirstSubKey	Identifies the key found after the specified key in the registry of Pocket PC
ceRegistryListValue	Returns the name (and possibly the type) of the values for a key found in the registry of the Pocket PC
ceRegistryNextKey	Identifies the key found after the specified key in the registry of Pocket PC
ceRegistryQueryValue	Reads the value of a register in the registry of the Pocket PC
ceRegistrySetValue	Writes a value into a register of the Pocket PC registry
ceRegistrySubKey	Identifies the path of the Nth specified sub-key in the registry of the Pocket PC
ceRemoveDir	Deletes a directory from the Pocket PC connected to the current computer
ceRunExe	Starts the execution of a program (an executable for example) from the current application
ceSysDir	Returns the path of a system directory for the Pocket PC connected to the current computer
ceWindowsVersion	Returns some information about the Windows version used on the Pocket PC connected to the current computer
ceWinEnum	Enables you to enumerate the Windows currently opened on the Pocket PC
ceWinTitle	Returns the title of the specified Windows window
ceXRes	Returns the horizontal resolution of the screen for the Pocket PC connected to the current computer
ceYRes	Returns the vertical resolution of the screen for the Pocket PC connected to the current computer

Note: these functions are specific to **WinDev** and not to **WinDev Mobile.**


PART 6
Setup
10
DEVELOP 10 TIMES FASTER
PC SOFT

The WinDev Mobile Framework

The WinDev Mobile Framework is the set of libraries (.DLL files) required to run a WinDev Mobile application.
When creating the executable, you can choose to use:
- the common WinDev Framework (renamed or not),
- a custom framework.

In Android, the framework is automatically included in each application during its generation. Its size is smaller than 1 MB.

Using the common WinDev Mobile framework

When using the common framework, the libraries are installed in a common directory. The libraries are shared by all the WinDev Mobile applications installed on the same computer.

Benefits of the common framework:
- The disk space used by the framework (about 17MB) is shared by all the applications.
- The update of the framework is performed once for all the applications installed.

Note: The common framework is installed at a fixed location in the RAM of the device. You have the ability to rename the DLLs included in the framework and to place the renamed framework anywhere (including on a storage card for example in order to save the RAM).

Using a custom framework

When using a custom framework, the libraries are installed in the directory of each application. Therefore, each WinDev Mobile application uses its own version of libraries. You also have the ability to rename the libraries when using a custom framework.

Benefits of the custom framework:
- Each application can exploit a different version of the framework DLLs.
- The framework of a given application can be updated without impacting the other applications.
- The framework can be renamed.

Installing an application

Several methods can be used to install a WinDev Mobile application:

- **Setup in CAB format**. This setup program is run on a Windows Mobile device.
- **Setup in MSI format**. This setup program is run on a PC running Windows connected to a Windows Mobile device.
- **Setup by direct copy** of the executable from the PC to the Windows Mobile device.

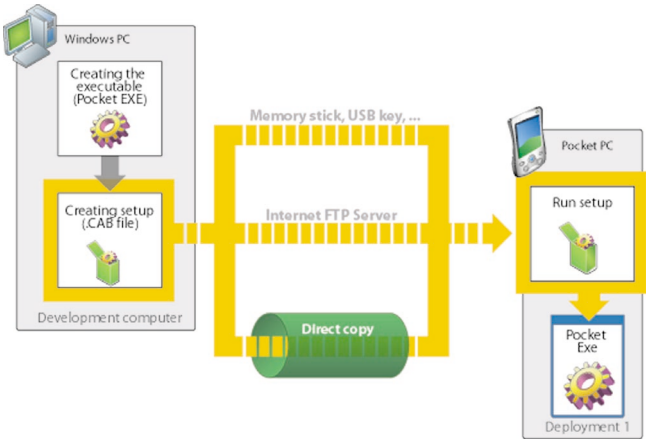
- **Setup in APK format**. This setup program is run on the Android device.
- **Setup via Android Market**.

Setup in CAB format

This setup consists in:

- generating the application executable on the development computer via WinDev Mobile.
- generating the setup program of the application on the development computer. This setup program corresponds to a ".CAB" file.
- copying this setup program onto the Windows Mobile devices of the end users.
- starting this setup program on the Windows Mobile devices. This program installs all the files required by the application.

To use this application, start the application on the Windows Mobile device (via the shortcut created in the "Start" menu).

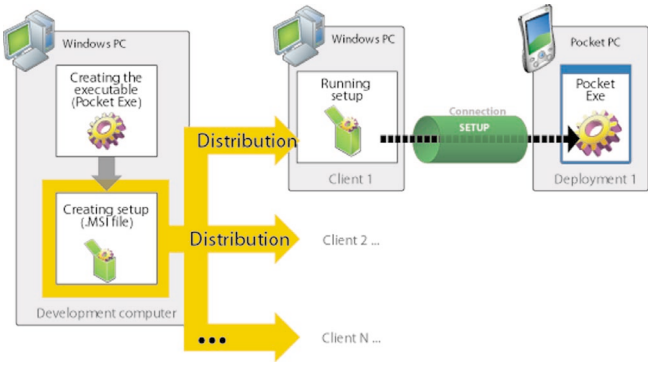


Setup in MSI format

Windows Mobile

This setup consists in:
- generating the application executable on the development computer.
- generating the setup program of the application on the development computer. This setup program corresponds to a ".MSI" file.
- distributing this setup program to the end users.
- starting this setup program on the PCs. The application will be automatically installed on the Windows Mobile device connected to the PC.
  Note: If no Windows Mobile device is connected, the setup will be performed during the next synchronization between the PC and the Windows Mobile device.

.

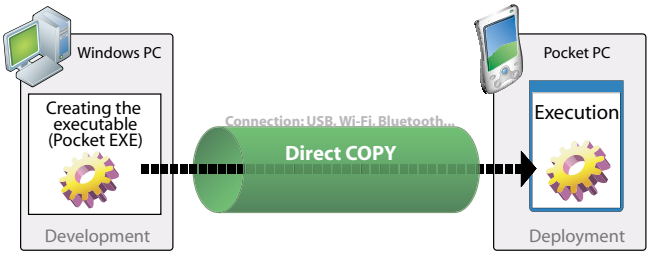


Setup by direct copy

Windows Mobile

This setup consists in:
- generating the application executable on the development computer.
- copying this executable onto the Windows Mobile device connected to the PC.

To use this application, run this executable on the Pocket PC (double-click the ".EXE" file for example).



Setup in APK format

This setup consists in:

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

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

Setup via Android Market

Android Market is an application offered by Google. Android Market presents some applications for Android that can be purchased or downloaded from a single setup interface and included on Android devices.

This setup consists in:

- generating the application on the development computer.
- digitally signing the APK file. For a deployment to Android Market, we recommend that you use a real key signed by a recognized trusted authority.
- uploading the APK file onto the Web site of the Android Market.
  Note: you must register on the site beforehand.
- the users of the application will only have to install the requested application from the "Android Market" application of their Android device.

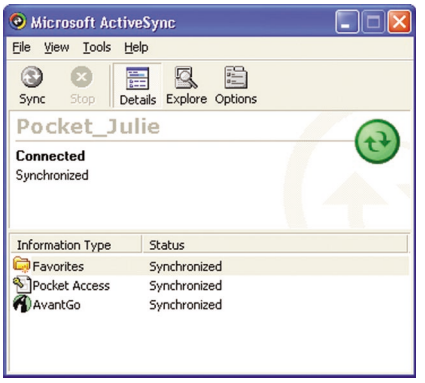
To run the application, all you have to do is choose its icon from the "All programs" menu.

Synchronization software: ActiveSync, ...

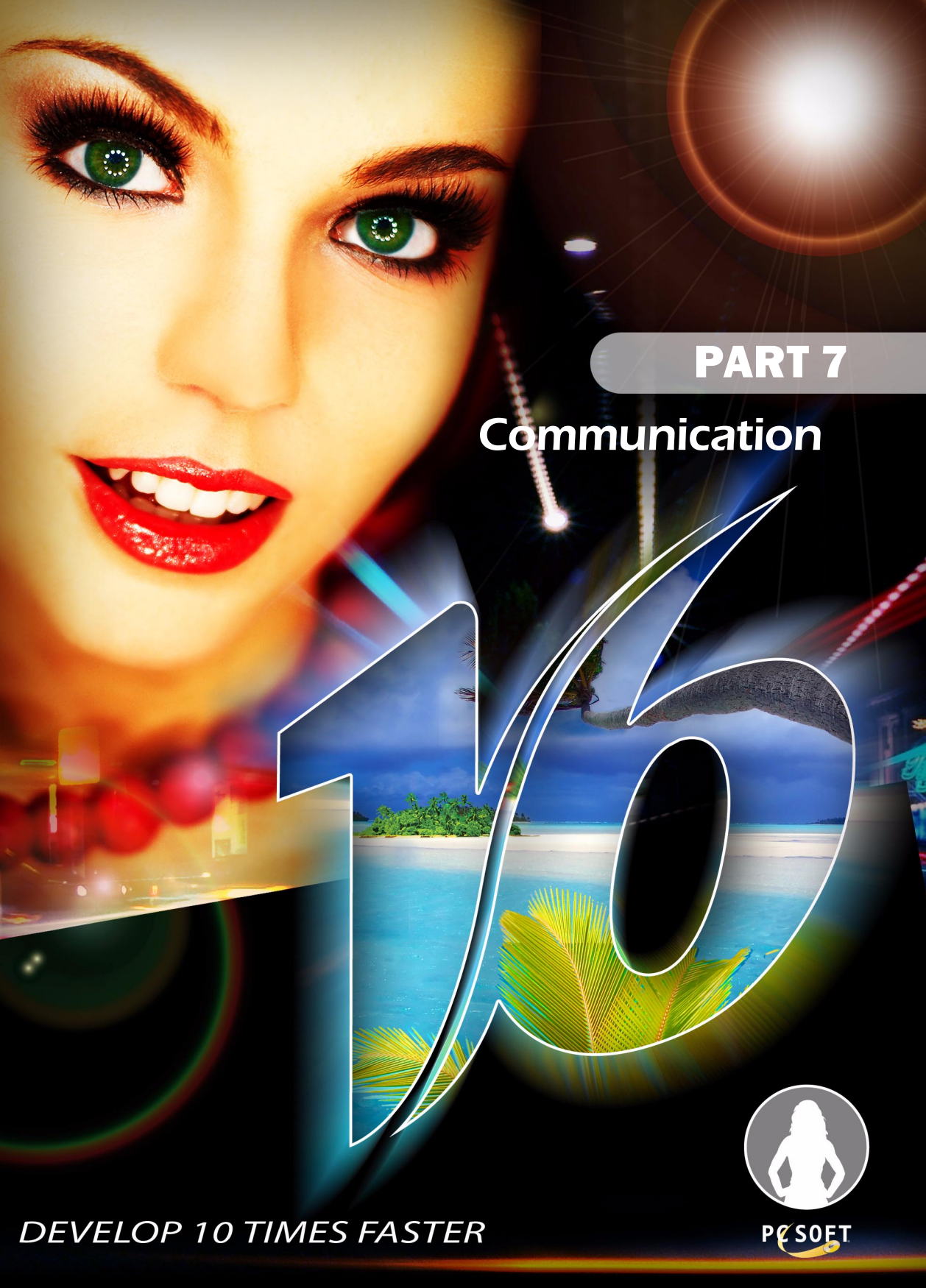
Windows Mobile

Several programs are used to synchronize the data (WinDev application, email, calendar, contacts, tasks, notes, ...) between a PC and a Pocket PC:

- **ActiveSync t**hat can be used until Windows XP.
  In most cases, ActiveSync is supplied with the Pocket PC but it can also be downloaded from Internet.
  ActiveSync automatically starts on the PC when the connection is established between the Pocket PC and the PC. The data to synchronize is configured in ActiveSync ("Options" icon).



- the "Windows Mobile device manager", available from Windows Vista. This manager automatically starts when the connection is established between the Pocket PC and the PC.


PART 7
Communication
10
DEVELOP 10 TIMES FASTER
PC SOFT

Communication with WinDev Mobile

WinDev Mobile offers several communication functions in a large number of areas.
With these functions you can easily perform the following:

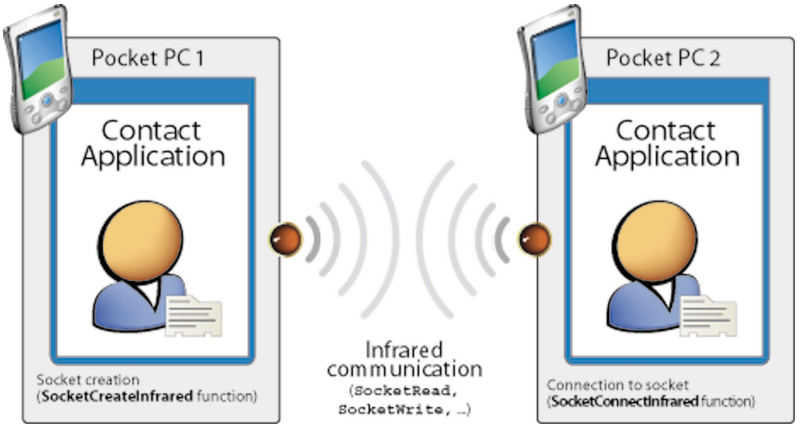
- email management (POP3, IMAP and SMTP protocols),
- FTP (file transfer),
- HTTP and HTTPS queries,
- telephony,
- SOAP requests (to access the SOAP, J2EE or .Net Webservices),
- SMS management,
- TCP sockets (with automatic use of the SSL protocol), UDP sockets,
- infrared or Bluetooth sockets.

The availability of these functions will depend on the features of the device that runs the application.

Some examples

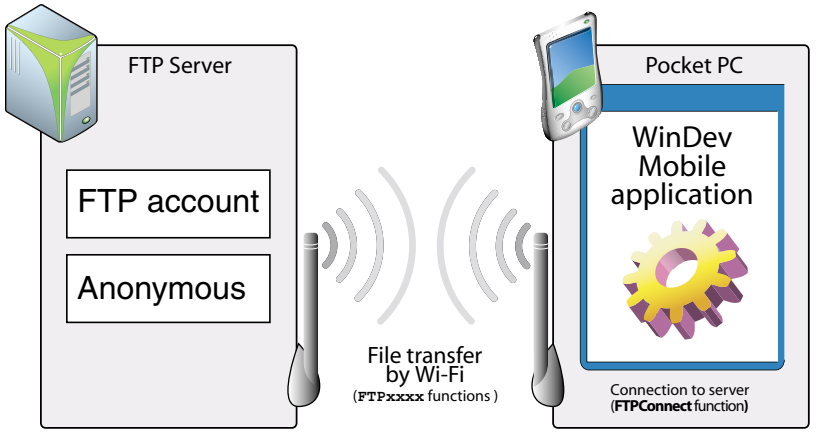
1. Communication by Infrared

Communication by infrared is performed via the Socket functions (***SocketConnectInfrared***, ***SocketCreateInfrared***, ...). Therefore, the Windows Mobile or Android devices can communicate with any type of device.



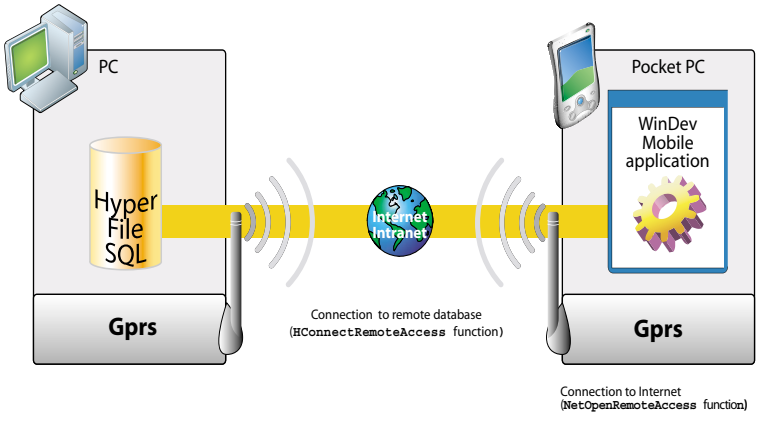
2. Communication by Wi-Fi

The communication by Wi-Fi can be used to transfer files by FTP for example.



3. Communication by GPRS

The communication by GPRS can be used to access a remote HyperFileSQL database via Internet for instance.

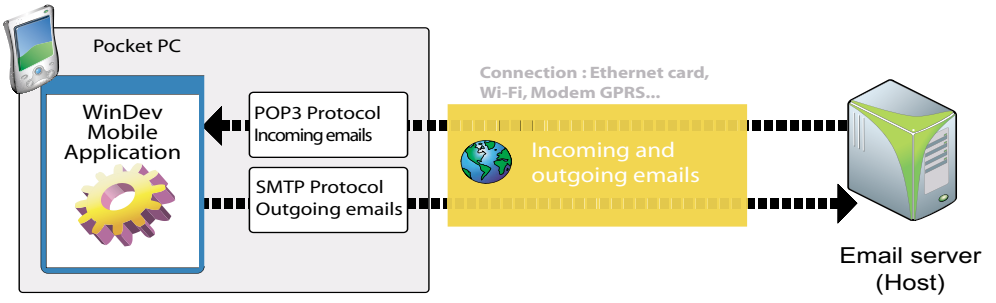


Managing emails (POP3/IMAP/SMTP)

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

Notes:

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



Principle

1. Connect the Windows Mobile device to a PC (required if it is not equipped natively equipped with an Internet access).
2. Connect to the service provider (if necessary).
3. Start an email session with ***EmailStartSession***.
4. Send and read the messages.
5. Close the messaging session with ***EmailCloseSession***.

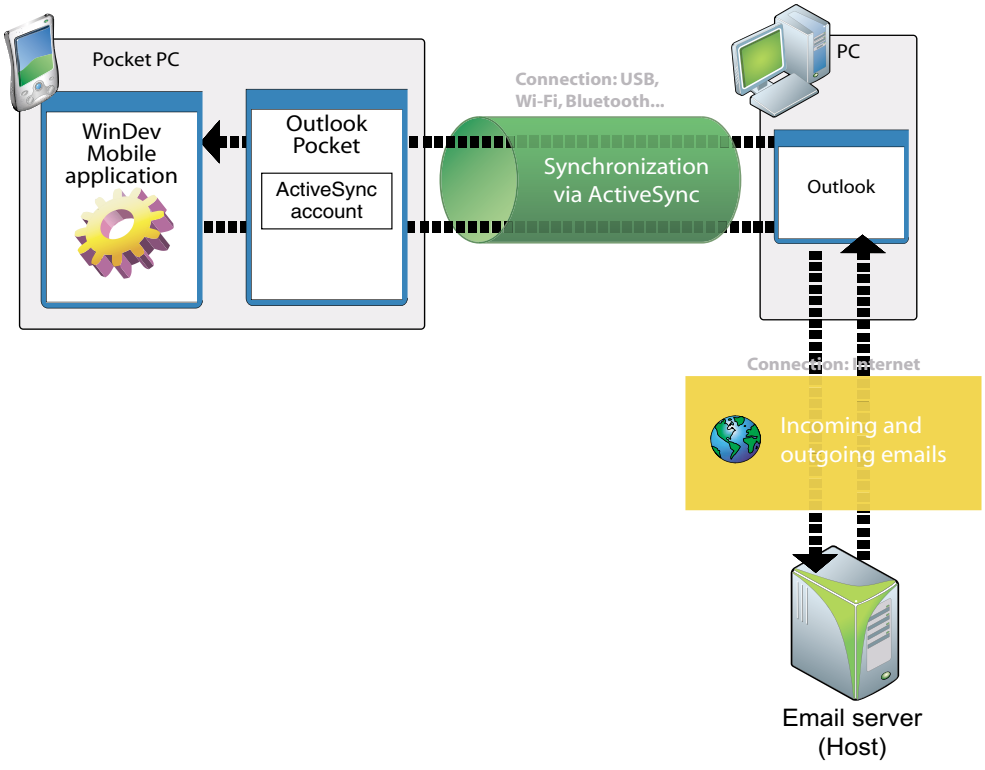
Managing emails (CEMAPI)

Windows Mobile

CEMAPI is an API for email management used by most of the Pocket applications to send and receive emails (Pocket Outlook in most cases).
CEMAPI simplifies the management of the emails received by the hosting company. When an email is read, it is automatically loaded in the local message box and deleted from the server (at the hosting company).
All the characteristics required to manage the emails (POP3 protocol, SMTP protocol, remote access, ...) are grouped in the "User account".
With the email functions of WLanguage, a WinDev application can directly handle the emails managed in an application that uses "CEMAPI".

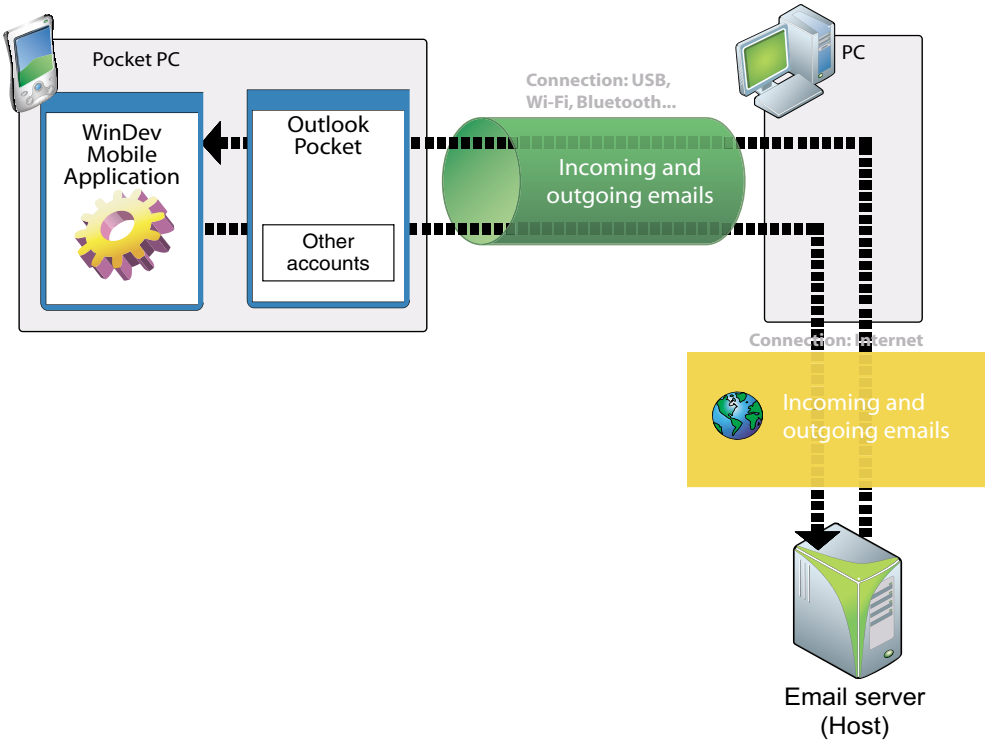
Using the "ActiveSync" user account

A user account defined in Pocket Outlook is required to manage the emails via CEMAPI. By default, Pocket Outlook manages the "ActiveSync" user account.



Using a specific user account

To use another user account, you must define one.
If the Pocket PC has no direct Internet link, a synchronization with the PC is required to send and receive emails.

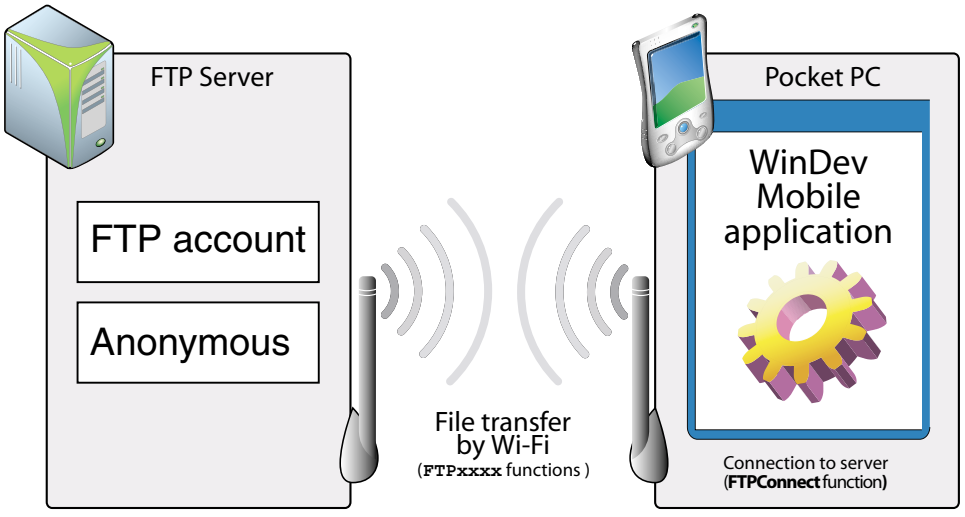


If the Pocket PC has direct Internet access (by Wi-Fi, ...), no synchronization with the PC is required.

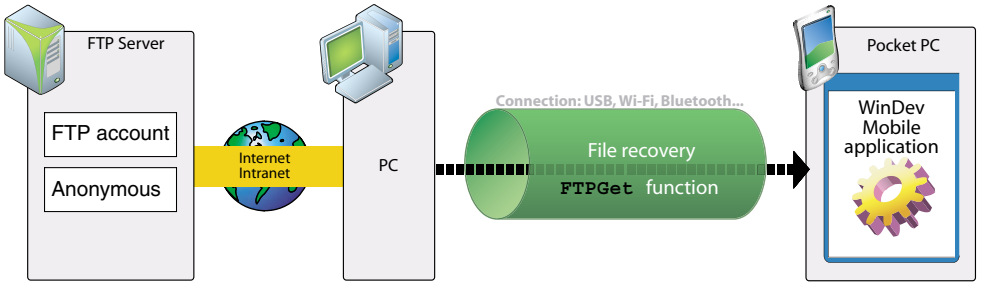
Handling files on an FTP server

FTP (File Transfer Protocol) is a protocol used to transfer files from a site to another remote site. This protocol is used to exchange files via TCP/IP, Internet Wi-Fi or ActiveSync. Several thousands of file servers can be accessed by FTP on Internet. These servers propose some shareware or freeware accessible to the public.
Several WLanguage functions allow you to manage files on an FTP server from your WinDev Mobile applications.

Transferring files by direct link between a Pocket PC and an FTP server by Wi-Fi:



Transferring files by Internet:

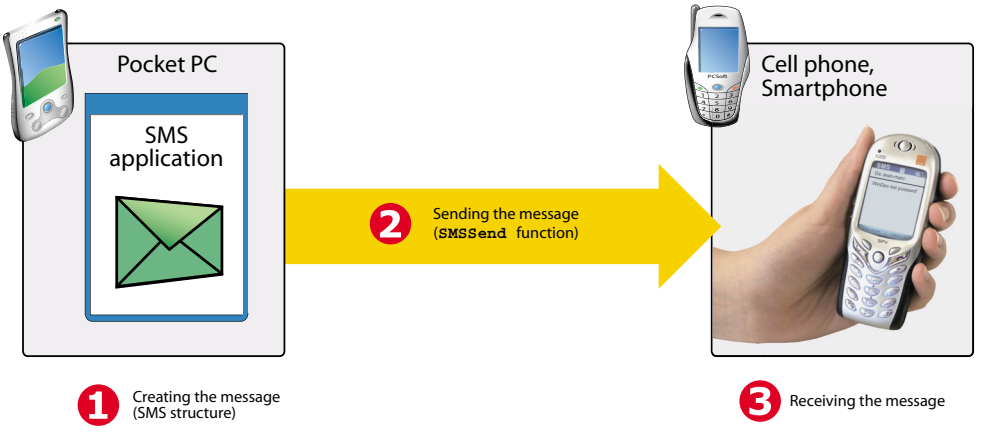


Managing SMSs

With the WLanguage functions, WinDev Mobile enables you to:
- send some SMSs.
- read the incoming SMSs.
- delete one or more incoming SMSs.

An SMS (Short Message Service) is a text message (up to 160 characters) sent on a cell phone.

To use the SMS functions, the Pocket PC application must be installed:
- on a Pocket PC with phone access (GSM type).
- on a Smartphone.



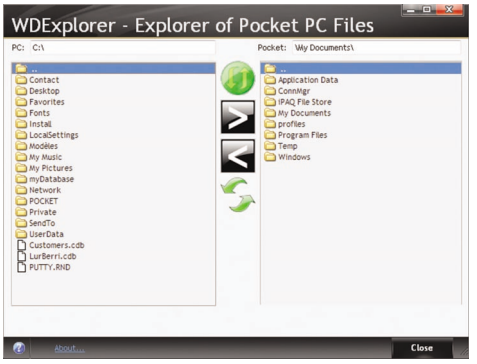

PART 8
Appendices
10
DEVELOP 10 TIMES FASTER
PC SOFT

Tools available for WinDev Mobile

Some specific tools are available for handling a Pocket PC from a PC:

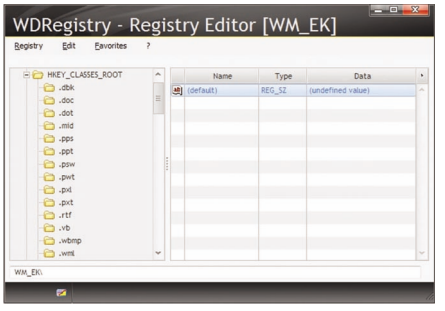
WDExplorer

Tool used to view the files and directories found on a Pocket PC, a Smartphone, ...



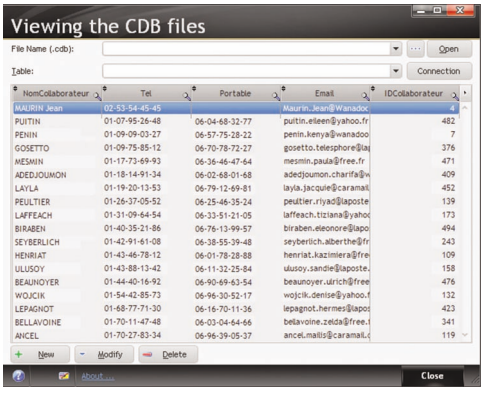
WDRegistry

Tool used to view the registry of a Pocket PC, a Smartphone, ...



WDCEDB

Tool used to access the standard databases (.cdb) found on a Pocket PC, a Smartphone, ...

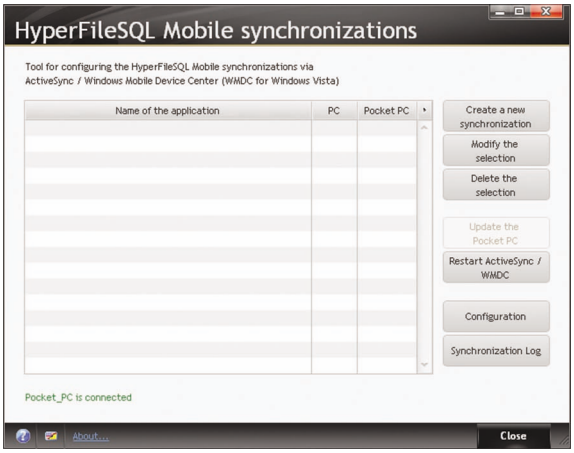


WDCapture

Tool used to perform screen captures or videos of the connected Pocket PC or Smartphone.

WDSynchro

Tool for configuring the HyperFileSQL Mobile synchronizations via ActiveSync.



Components supplied with WinDev Mobile

The examples of components supplied with WinDev Mobile are divided into 2 categories:

- **components that can be used from a WinDev Mobile application**.
  These components are found in the "Components\Sample Components\Mobile" sub-directory of the setup directory of WinDev Mobile.

Name of the component	Description
Datalogic component	Used to emulate the scanner of a DataLogic device: enable or disable the scanner, define an automatic or a manual scan, define the scan parameters, ... Also used to manage the device in a more precise way (Wi-Fi parameters). Also used to manage an Imager device as well as Bluetooth.
Pocket Directory picker	Directory picker for Pocket PC.
Pocket Falcon	Used to access all the features of Pocket PC Falcon.
Pocket GANTT	Used to display a GANTT chart in a memory table or in a window included in the component.
Pocket GPS	Used to interrogate a GPS to retrieve a longitude, a latitude, a speed, an altitude.
Pocket Intermec	Used to manage an Intermec device. Used to emulate the scanner and the imager (device for image acquisition) of the device
Pocket Limitation	This example explains how to implement a limitation system as well as a system for enabling the software on Pocket PC.
Pocket Login Management	Manages the user identification in an application from a login and a password.
Pocket PAXAR	Used to access the features of the bar code readers and printers of industrial devices made by PAXAR.
Pocket Pidion	Used to manage a Pidion device. Used to emulate the scanner, the imager (device for image acquisition), the bar code reader and the card reader of the device
Pocket Signature	Used to easily include a ready-to-use "Signature" control in your WinDev Mobile applications.
Pocket Symbol	Used to access all the features of Pocket PC Symbol.
Pocket TomTom	Emulates TomTom Navigator (satellite-aided navigation software).

- **components that can be used from a standard WinDev application that handles files from the Pocket PC.**
  These components are found in the "Components\Sample Components\Windows" sub-directory of the setup directory of WinDev Mobile.

Name of the component	Description
PC Directory Picker	Select a directory found on a Pocket PC from a standard WinDev application.
PC File Picker	Select files found on a Pocket PC from a standard WinDev application.

Two sub-directories are specific to each one of these examples:
- the "<ComponentName>-Example" sub-directory contains an example of project that uses the component.
- the "<ComponentName>-Source" sub-directory contains the component project.

Some additional components are supplied with the Technical Support Newsletter (LST) or can be downloaded from our site (www.windev.com).

Examples supplied with WinDev Mobile

The examples supplied with WinDev Mobile are intended to help you learn the features of WinDev Mobile.
Their source code is presented in details.
These examples are found in the "Examples" sub-directory of the setup directory of WinDev Mobile and they can be opened directly from the "Wizards, Examples and Components" pane.

Different types of examples are supplied with WinDev Mobile:
- examples that can be used with a Pocket PC only.
- examples containing a project that can be used on a Pocket PC and that interacts with a project that can be used on a PC.
- examples that can be used with a PC only.
- examples that can be used in Android.

Features of some examples supplied with WinDev Mobile.

Examples that can be used on Pocket PC only

Pocket Animated	This example explains how some animated images can be created by WinDev Mobile.
Pocket Attendance	This application is an attendance manager. It is used to identify the people attending a meeting. This database was previously filled with the list of members.
Pocket Camera	This example uses the management of photos and videos. The example is used to take a photo (.jpg format) or a video (.asf format) with VideoCapture. The images and the videos can be viewed in a looper control.
Pocket Explorer	This example is a file explorer for Windows CE. You have the ability to list the files and directories found on a Pocket PC.
Pocket Financial Functions	This examples explains how to use the financial functions.
Pocket Fixed Radars	This example is based on a GPS interrogation. It analyzes the coordinates of the current position and compares it to those of fixed radars in France. When approaching a radar, a beep sounds to warn the driver that a radar is near.
Pocket FTPClient	This example is used to view the content of an FTP server. It is also used to download, rename or delete files.
Pocket Images	This example is used to browse a specific directory to find some images.

Pocket Inventory	This example is used to draw up inventories and to save the results in a HyperFileSQL database.
Pocket Loan	This example is used to simulate loans and to view their depreciation schedules.
Pocket Managing Contacts	This example presents the management of contacts in Pocket PC and uses: - the loopers, - the queries - the feature for sending SMSs and emails - the phone call.
Pocket Managing Orders	This example is a simplified management of orders/invoices, used to: - create/modify/delete a product, - create/modify/delete a customer, - contact a customer by email, - show the history of the actions performed for a customer, - place an order, print an order form, - invoice an order, print an invoice.
Pocket Map	This example is a light version of WDMap. This example is used to view and modify the data files in HyperFileSQL Mobile format on a Pocket PC directly.
Pocket MIME Extraction	This example is used to extract the attachments from an email.
Pocket Notes	This example is used to draw some graphic "notes" and to save them. You have the ability to enter some keywords to identify your notes.
Pocket Password	This example presents a "box" of passwords. It can be used to manage the passwords created when using Internet sites but also in applications or in everyday's life.
Pocket Persistence	This example presents the functions used to manage the persistent values.
Pocket Photos	This example is used to take photos and to associate them with: - a caption and a description - a snapshot address - an explanatory diagram.
Pocket Poker	This example is used to play poker on a Pocket PC. The purpose of this game is simple: find out several identical cards.
Pocket Pool of threads	This example presents the use of threads. Reminder: A thread is a process run in parallel of the current application.

Pocket Registered	This example is an attendance manager, used to check a meeting attendance. This database was previously filled with the list of members. A bar code reader can be used to read the identifiers of the persons.
Pocket Regular Expressions	This example explains how to use the regular expressions and how to perform searches in character strings.
Pocket RTF	This example presents the display of the RTF format in the edit controls in Mobile.
Pocket Slide Show	This example is an image viewer for Pocket PC. It is used to view the images found in a given directory.
Pocket Statistics	This example performs various statistical calculations.
Pocket Stopwatch	This example explains how to use WinDev Mobile to create a stopwatch for a mobile terminal. In this example, a timer is used to display the hands of the analog stopwatch and to display the time spent at regular intervals.
Pocket Telephony	This example is a telephony application that can be used on a Pocket PC with phone access (GSM).
Pocket Tic Tac Toe	This example is used to play "Tic Tac Toe" on a Pocket PC. The purpose of this game is simple: align 3 pawns before your opponent does.
Pocket Virtual Keyboard	This example proposes some virtual keyboards that can be fully customized and certainly smaller than the standard keyboard of Pocket PCs.
Pocket ZIP	This example is used to create and handle some archives (".ZIP" files).

Examples containing a project that can be used on Pocket PC and that interacts with a project that can be used on PC

Sending SMSs • "Pocket Sending SMSs" project for Pocket PC • "PC Sending SMSs" project for PC	These examples are used to send SMSs.
Managing the purchase lists • "Pocket Managing purchase lists" project for Pocket PC • "PC Managing purchase lists" project for PC	These examples are used to manage a list of stores, departments, products and purchases. You have the ability to synchronize the data entered in the two projects.

Expenses • "Pocket Expenses" project for Pocket PC • "PC Expenses" project for PC	These examples are used to manage the expense accounts. You have the ability to synchronize the data entered in the two projects.
Beach Reservation • "Pocket Beach" project for Pocket PC • "PC Beach" project for PC	These examples are used to manage the bookings for private beaches. You have the ability to synchronize the data entered in the two projects.
Unicode socket • "Pocket Socket Unicode" project for Pocket PC • "PC Socket Unicode" project for PC	These examples present the operating mode of sockets with the Pocket PCs.
Poll • "Pocket Poll" project for Pocket PC • "PC Poll" project for PC	These examples are used to perform some polls. You have the ability to synchronize the data entered in the two projects.
Stocks • "Pocket Stocks" project for Pocket PC • "PC Stocks" project for PC	These examples are used to manage the stocks. You have the ability to synchronize the data entered in the two projects.
Network tasks • "Pocket Network tasks" project for Pocket PC • "PC Network tasks" project for PC	The 'PC Network Tasks' application is used to enter a task list (with management of priorities, deadline, automatic reminder, ...). The 'Pocket Network Tasks' application is used to access this task list to specify that a task is in progress or completed.
Using sockets • "Pocket Using sockets" project for Pocket PC • "PC Using sockets" project for PC	These examples present the functions for managing the sockets.

Examples of Today Screen

Pocket TodayScreen	This example presents the use of a Today Screen. This Today Screen is used to display a clock. A button is used to display some additional information: the full date of the day, the time...

Examples that can be used on PC only

PC CDB Browser	This example is used to access the standard databases (.cdb) found on a Pocket PC.
PC Explorer	This example is used to view the files and directories found on a Pocket PC
PC Photo Album	This example is used to import and to export some photos found on a Pocket PC from a PC.
PC Registry	This example is used to handle the registry of a Pocket PC from a PC.

Examples that can be used in Android only

Android Explorer	This example is used to list the files and directories found on an Android device.
Android GPS	This example presents the use of the GPS functions of WLanguage in an Android application.
Android Managing Orders	This example is used to manage orders and their invoicing.
Android Password	This example is used to manage the passwords created when using Internet sites but also in applications or in everyday's life.
Android Registered	This example is used to identify the persons who are attending a seminar.
Android RSS Reader	This example is a reader of RSS stream for the Android devices.

Some additional examples are supplied with the Technical Support Newsletter (LST) or can be downloaded from our site (www.windev.com).