



Windows Mobile Programming





- Compact Microsoft operating system for PDAs and Smartphones
- Has a suite of basic applications for mobile devices based on Microsoft Win32 API
- Designed to look like corresponding desktop versions of Windows





- .Net is a programming framework from Microsoft for building Windows applications
- Accompanying programming language C# – inspired by C++ and Java
- Aimed at Windows, but .Net implementations exist for other platforms as well, e.g. Mono for Linux, Unix, MacOS etc.





- The .Net framework provides a large base of ready-made functionality to use
 - User interface components
 - Data I/O
 - Networking
 - Web services
 - Data base access
 - XML handling
 - etc...





- Programs for .Net compiled in a machine-independent way similarly to Java

Applications

.Net Framework Class Library

Common Language Runtime (CLR)

Operating System





.Net Compact Framework

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- The .Net Compact Framework (CF) is a stripped-down version of .Net for memory-constrained devices
- Functionality not useful to mobile devices has been left out
- The number of overloaded functions in the class library has been reduced
- Result: a light version at 8% size of full .Net





- .Net & C# development easily accomplished in Microsoft Visual Studio
 - Includes graphical drag'n'drop GUI editor etc.
- It is also possible to develop .Net CF and C# applications using freely available compiler tools and Windows Mobile device emulator from Microsoft
 - Simpler but free development tools





- Easy GUI development using existing GUI components
- The namespace (package) *System.Windows.Forms* for example contains well-known components such as:
Button, TextBox, Label, RadioButton, ComboBox, ListBox, MessageBox, also WebBrowser





Network Functionality

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- *WebRequest* and *WebResponse* classes to automatically handle such protocols as HTTP and HTTPS. *Dns* for looking up web addresses etc.
- *TcpClient* and *TcpListener* for TCP client/server implementation
 - TCP comm. By reading/writing streams
- *IrdaClient* and *IrdaListener* for infrared communication





Database functionality

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- In .Net, databases are accessed through ADO.Net providing access to such databases as Oracle, IBM DB2, MySQL, PostgreSQL
- *SqlCommand* can be used to form queries to the database
- *SqlDataAdapter* can be used to fill data into *DataSets*
- Data can be bound quite automatically to GUI elements such as lists etc.





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- Windows very familiar to many users
- Well-documented and supported commercial product
- Windows still not widely used – market shares Q1 2007:
 - Symbian 71.1%
 - Linux 14.3%
 - Microsoft 6.9%
 - Microsoft gaining on Linux since Q1 2006Source: Canalys





- More information can be found at:
 - C#
[http://msdn2.microsoft.com/en-us/library/aa287558\(VS.71\).aspx](http://msdn2.microsoft.com/en-us/library/aa287558(VS.71).aspx)
 - .Net
<http://msdn2.microsoft.com/en-us/netframework/aa497273.aspx>
 - Windows Mobile
<http://msdn2.microsoft.com/en-us/windowsmobile/default.aspx>

