



Windows Mobile

- Andy Wigley, Daniel Moth, Peter Foot, **Microsoft Mobile Development Handbook**, Microsoft Press 2007

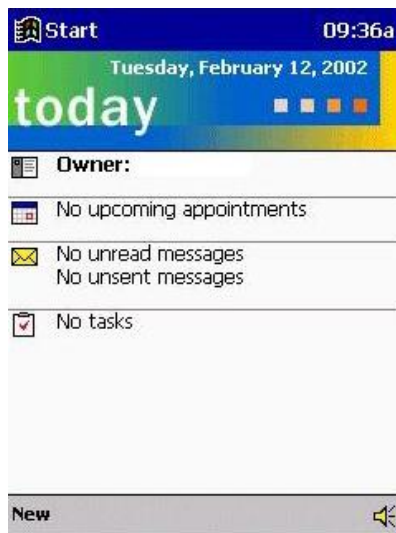
Windows CE

- It is a modular operating system
 - the Platform Builder allows to pick exactly which modules of Windows CE should be built into an operating system.
 - since Windows Embedded CE 6.0, the Platform Builder is a plug-in for Visual Studio 2005
- It is a kind of tool kit that device makers use for building customized operating system images for variety of nondesktop devices.

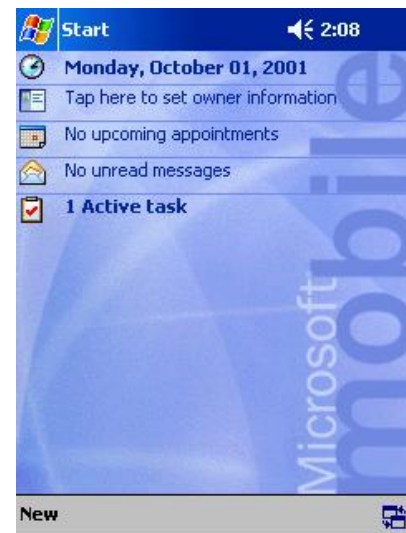
Windows Mobile

- It is a compact operating system combined with a suite of basic applications for mobile devices based on the Microsoft Win32 API
- Windows Mobile is built on Windows CE
 - Windows Mobile 2003 was built on Windows CE version 4.2
 - Windows Mobile 5.0 and Windows Mobile 6.0 both are built on Windows CE 5.0
- The three main platforms:
 - Windows Mobile Classic (formerly: Pocket PC)
 - Windows Mobile Standard (formerly: SmartPhone)
 - Windows Mobile Professional (formerly: Pocket PC Phone Edition)

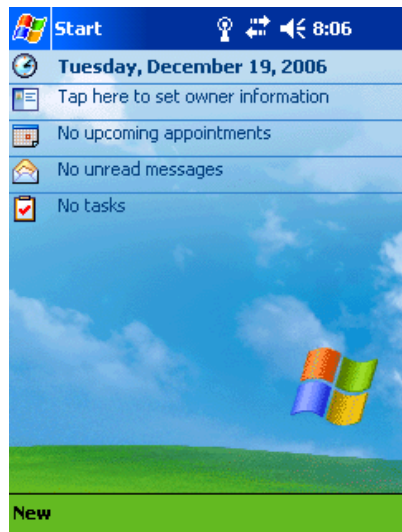
Windows Mobile History



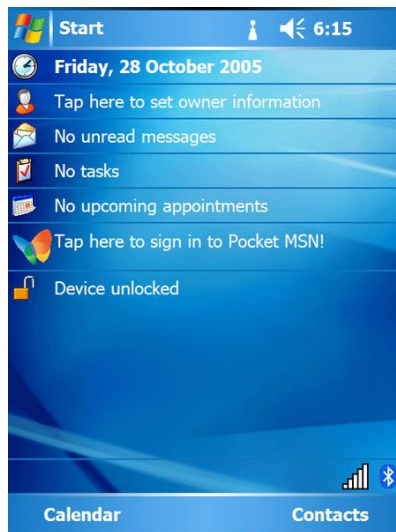
Pocket PC 2000



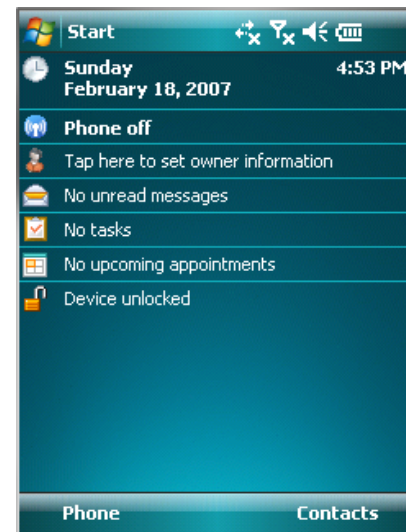
Pocket PC 2002



Windows Mobile 2003



Windows Mobile 5.0



Windows Mobile 6

Pocket PC

- It is a hardware specification for a handheld-sized computer (Personal Digital Assistant) that runs the Windows Mobile operating system
- Required features:
 - ☐ a touchscreen
 - ☐ a directional pad or touchpad
 - ☐ a set of hardware application buttons
- Optional features:
 - ☐ a phone



Smartphone

- It is a mobile phone offering advanced capabilities beyond a typical mobile phone, often with PC-like functionality
- There is no industry standard definition of a smartphone
 - a phone that runs complete operating system software providing a standardized interface and platform for application developers
 - a phone with advanced features



Software Tools

- Visual Studio

- for Windows Vista additionally:

- Visual Studio 2005 SP1 and Visual Studio 2005 SP1 Update for Windows Vista
 - Microsoft Device Emulator 2.0 or later

- SDK:

- Windows Mobile 5.0 SDK for Pocket PC
 - Windows Mobile 5.0 SDK for Smartphone
 - Windows Mobile 6:

- Standard – for smartphones
 - Classic – for Pocket PCs
 - Professional – for Pocket PC Phone Editions

Visual Studio

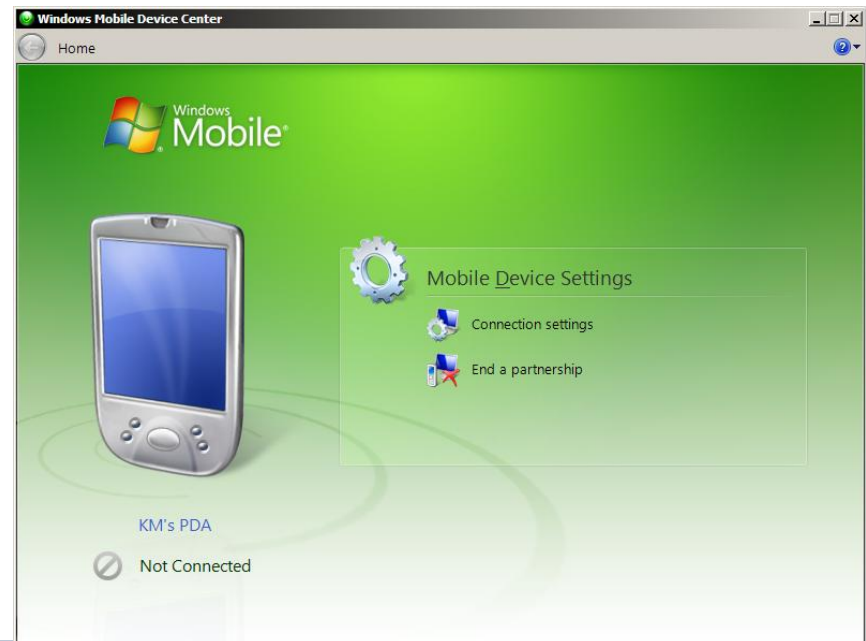
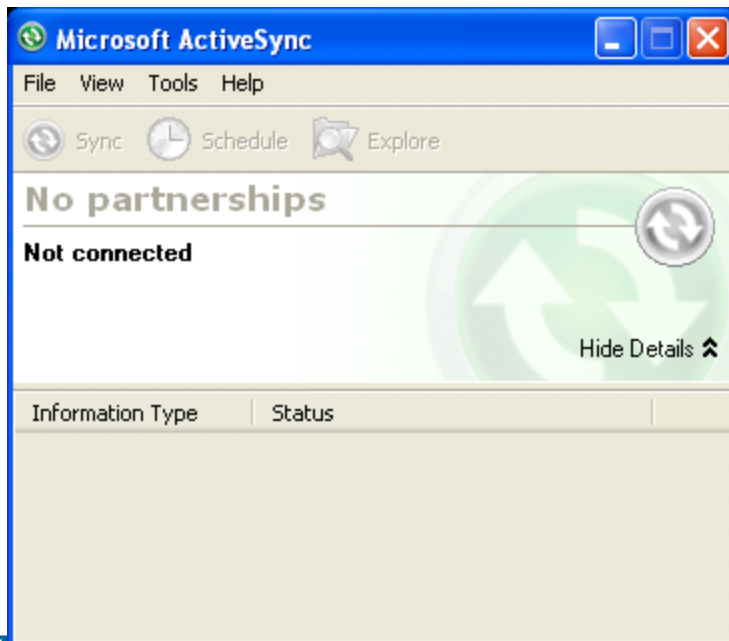
- Visual Studio .NET 2003
 - .NET CF 1.0:
 - Pocket PC 2002, Windows Mobile 2003
 - Windows CE 4.1, 4.2
 - .NET CF 1.0 SP1
 - Windows Mobile 2003 for smartphones
- Visual Studio 2005
 - .NET CF 1.0 and 2.0:
 - Windows Mobile 2003, 5.0, 6.0
 - Windows CE 5.0, 6.0
- Visual Studio 2008
 - .NET CF 3.5:
 - Windows Mobile 5.0 or later
 - Windows CE 5.0 or later

ActiveSync

- It is a free synchronization program developed by Microsoft
- It allows a mobile device to be synchronized with:
 - a desktop PC
 - a server running Microsoft Exchange Server, PostPath Email and Collaboration Server, Kerio MailServer or Z-push
- Supported mobile devices:
 - Pocket PCs or Smartphones running Windows Mobile
 - devices without Windows, e.g. running Symbian
- Windows Mobile Device Center is a replacement for ActiveSync in Windows Vista

ActiveSync Features

- Synchronization with Microsoft Outlook, along with Internet "favorites", files, and tasks, amongst other data types
- The manual transfer of files to a mobile device
- Limited backup/restore functionality
- The ability to install and uninstall mobile device applications



.NET Compact Framework

- It is a compatible subset of the full .NET Framework
 - it implements approximately 30 percent of the classes and methods of the full framework
- Mobile devices typically have storage capacity in the range 32 MB to 128 MB
 - .NET Framework footprint: around 40 MB
 - .NET CF 1.0 footprint: 1.5 MB
 - .NET CF 2.0 footprint: 4 MB
- Versions:
 - 1.0 – Visual Studio .NET 2003
 - 2.0 – Visual Studio 2005
 - 3.5 – Visual Studio 2008

New Features of .NET CF 2.0

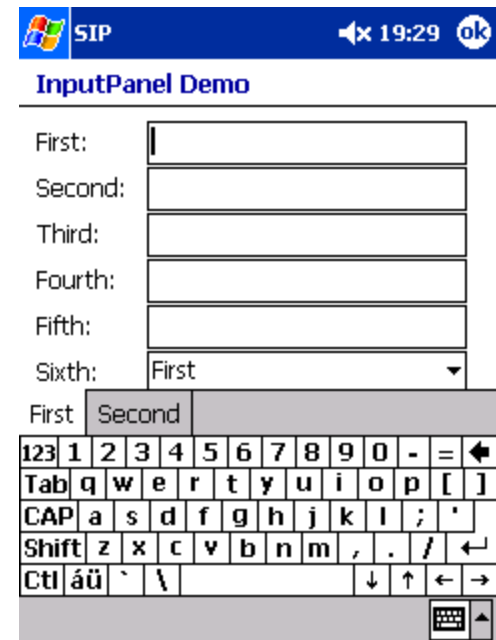
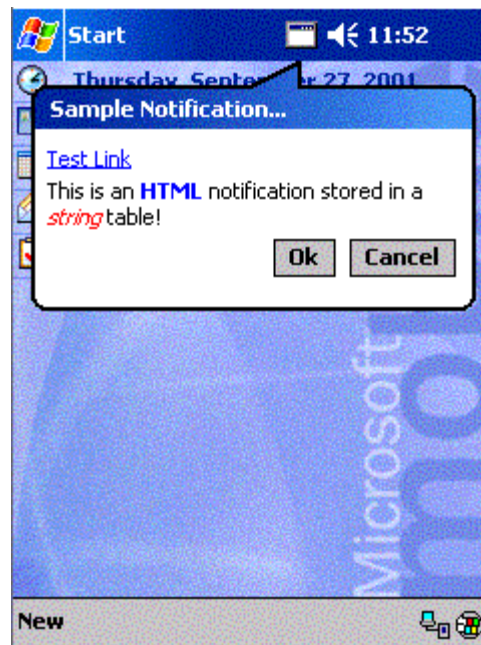
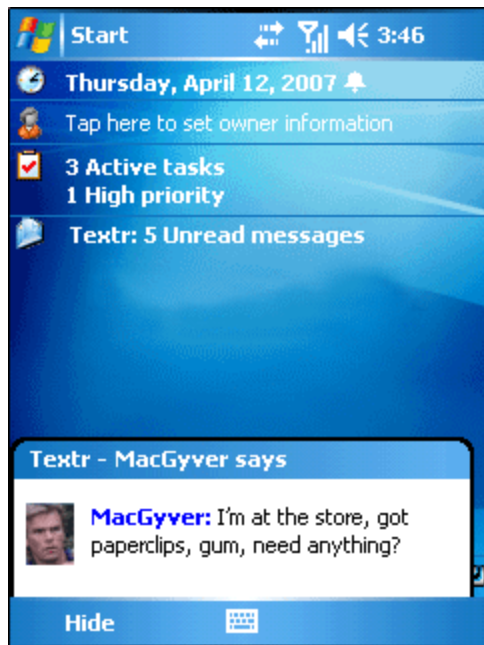
- Windows Forms:
 - new controls: Month Calendar, DateTimePicker, DataGrid, DocumentList, LinkLabel, Notification, Splitter, WebBrowser
 - added support for docking and anchoring
 - the AutoScroll property
 - automatic scalling according to the display
 - tab support and keyboard management
- Using a serial port
- Support for Microsoft Message Queuing
- Availability of COM interop
- Extensive support for cryptography
- Support for Microsoft Mobile DirectX and Direct3D Mobile APIs

New Features of .NET CF 3.5

- Compact Windows Communication Foundation (WCF)
 - clients that are running the .NET Compact Framework can connect to existing WCF Web services on the desktop
- Compact Language Integrated Query (LINQ)
 - general-purpose query facilities to the .NET Compact Framework that apply to various sources of information such as relational databases, XML data, and in-memory objects
- CLR Profiler
- Support for compression classes
- Improvements in the Global Assembly Cache

Microsoft.WindowsCE.Forms

- DocumentList - a full-screen control that provides the same interface as the built-in file explorer for working with folders and files in the My Documents folder
- Notification – standard Pocket PC "balloon popup" at the top or "toast popup" from the bottom
- InputPanel – controls the soft input panel (SIP) for entering data



Microsoft.WindowsCE.Forms cont.

- `HardwareButton` – allows overriding the functionality of Pocket PC hardware buttons
- `LogFont` – drawing text at an angle
- `MessageWindow` – provides the ability to send and receive Windows-based messages
- `SystemSettings` – access to user interface and native Windows CE operating system settings on a device (currently only `ScreenOrientation`)

SQL Server 2005 Compact Edition

- It is a lightweight relational database that supports data types that are compatible with full SQL Server 2005
- It is supported on all windows desktop platforms as well as on devices
 - in the first version it was called SQL Server 2005 Edition and it was supported only on mobile devices and Tablet PCs
- It runs in-process in your application, meaning that it does not require a separate server process to operate
- It can be used in .NET CF applications and in native applications

SQL Server Compact 3.5

- Free to use and distribute
- Supports desktops and mobile devices
- Small footprint for easy deployment
- Fully embeddable architecture
- No administration required
- Single file, code-free database format
- Support for ClickOnce, XCopy, MSI, CAB, and non-admin embedded installation options
- Supports all Microsoft Windows embedded, mobile, desktop, and server operating systems
- Supports a rich subset of Transact-SQL syntax and SQL Server data types
- Microsoft Visual Studio 2008 integration
- Supports ADO.NET, LINQ to SQL, LINQ to Entities, and the ADO.NET Entity Framework
- Supports multiple concurrent local connections

Pocket PC Emulator

- Provides a virtual computer running on the desktop computer
- Duplicates hardware that runs Microsoft Windows CE on an Intel x86-based PC
- Powered by Windows CE operating system and Pocket PC components
- Guarantees high level of fidelity between actual Pocket PC device and device emulation environment

