



win CE @G

Cutting Edge Win CE Development



*"**Idhasoft** is a global world-class organization providing best-of-breed localized business and technology solutions, with continuous innovation and quality backed by best-in-class people"*

In an effort to gain decisive expertise and advantage over the mobile and wireless domain, GMI has developed a competitive skill set that encompasses all wireless technologies and wireless networking platforms. With prior excellence in development across the entertainment and networking arena, GMI enhances the mobile internet revolution through cutting edge solutions equipped with seamless wireless to web internetworking capabilities.

GMI's portfolio of Win CE development includes a wide spectrum of services ranging from delivering typical mobile functionality enhancing applications like data recording tools to large scale projects like the deployment of exhaustive media streaming systems and advertising networks with wireless web connectivity. With numerous breakthroughs to its credit, GMI provides a definitive advantage over the wireless sector with its cutting edge Win CE development services.

Streaming Multimedia Content Distribution Over The Mobile Network

win CE@G

Developed as a streaming multimedia system, the application is capable of audio video content distribution over various mobile networks and provides users with the ability to edit the content.

Platform

Visual studio 2005
Windows Mobile 5.0
PocketPC SDK
Windows Mobile 5.0 Smartphone SDK
Winsock 2.0
MSXML 3.0
GPRS
WLAN
WinCE 4.2 & 5.0

Application Overview

The application enhances video uploading and downloading for users by providing editing features like creating tags for video uploads. This project is an interactive streaming multimedia application. The application performs two major roles, namely being the 'Editor' and the 'Video Player'. As the editor, the system allows users to add tags to videos at the client end. Users can then upload the file with the added tags. The video player functionality enables users to download and view the video and the associated tags.

The tagging process is implemented such that the tags can be edited while the video is being played (real-time) or after the video has done playing (differed-time). The tags are userdependant and can be created in image, video and text format. Various video categories are incorporated and a superior video conversion engine has been exclusively created to make different video formats compatible for being played on various mobiles as well the PC. Communication part with server is carried out using sockets over GPRS and the system also ensures seamless video play through an intelligent backend process that provided break-free streaming irrespective of the video size.

The system comprises of two core components

Web Server: Designed to run on Windows, the Web server makes it possible to configure and monitor the entire system. Besides keeping track of mobile & PDA users to display location-based content, the Web server also allows for centralized monitoring of the security.

Connection Management: Mobile users can connect directly to web server using GPRS, WLAN networks.

Location-Based Services and Advertising Network for Mobile Devices



The system is a robust end-to-end, location-based proximity content distribution point server designed for making data accessible to any wireless device enabled with the required downloadable wireless client, providing marketing opportunities over the wireless network.

Platform

Embedded VC++ 4.0
Windows Mobile 2003 Phone Edition
Smartphone 2003 SDK
Visual studio 2005
Windows Mobile 5.0
PocketPC SDK
Windows Mobile 5.0 Smartphone SDK
Winsock 2.0
WinCE .Net 4.2
MSXML 3.0
GPRS, WLAN and Bluetooth
WinCE 4.2, 5.0

Application Overview

Developed as an end-to-end, location-based proximity content distribution point server running on the Windows platform, the system makes data accessible to any wireless device enabled with the required downloadable wireless client. The system is designed to provide streamlined location-based content distribution services over short-range, low-power wireless networking technologies like Bluetooth, GPRS & WLAN. Through the software, mobile users can access Bluetooth, GPRS or WLAN network located at specific locations and access various value-added services in addition to localized information.

The complete solution is targeted for effectively promoting infotainment services, business advertisements and marketing activities in shopping centers and plazas etc.

Among numerous other functions, the system is made capable of handling

Location aware services, authorization & authentication, devices & services discovery using ad-hoc network services.

Localized information and entertainment / infotainment services via wireless technologies such as Bluetooth, WLAN and GPRS.

Localized WAP Push services to name a few.

Wireless Network Strength Indicator



Capturing information on network performance from users handsets, the application is a mobile and web-based solution that measures the performance of wireless networks in real time.

Platform

Embedded VC++ 4.0
Windows Mobile 2003 Phone Edition
Smartphone 2003 SDK
WinCE 4.2

Application Overview

Developed as a wireless network strength indicator, the application collects GSM network details, GPS data and voice call usage data to measure the network performance through its Client and Server modules. The Client module resides on the mobile phone and delivers collected information to the web-based Server module at specific time intervals, effectively monitoring the network performance.

The base engine (WBEngine) is implemented as a services DLL, which is launched by the 'services EXE' when the device is initialized. The service can be initiated or stopped from the user interface, which is implemented as executable file.

The Wireless Barometer collects the following information

GSM Network details: Standard information of the wireless network while in Home or Visitor Location network, area info, signal strength, network operator info etc.

GPS data: All GPS related information, Longitude, Latitude, Altitude and so on.

Voice Calls usage data: All calls dialed, received, dropped, rejected, blocked, busy etc.

Mobile Spying Application



The application is developed as an activity logger, capable of recording all SMSs, phone calls, GPRS events and multimedia messages from a mobile phone for parental monitoring purposes.

Platform

Visual studio 2005

Windows Mobile 5.0 PocketPC SDK

Windows Mobile 5.0 Smartphone SDK

WinCE 5.0

Application Overview

The application performs systematic parental monitoring on a wireless device by recording SMS messages, call history(incoming/outgoing), call duration, GPRS activity & contact names for all messages and calls. The system is also designed to offer maximum security through the provision of a secret key. Once installed, the system stays active in the background and can only be accessed by a secret key that only the user possesses. Effectively working as a spy, the system sends all the recorded data to the web-based server over GPRS. SMS, MMS, calls, GPRS events etc. are captured and uploaded seamlessly and require minimal user intervention. Users can check details of all the SMS, MMS, Calls and GPRS usages by logging onto the server.

The application consists of two modules, namely UI and Background Service

UI Module: Through the UI module, users can set the GPRS access point that is used by the Background Service module to upload the data to the server. The UI module enables the begin/end functions for data capturing after proper validation. In addition to this, the module also provides users with numerous customization options for exact capturing of specific data.

Background Service Module: This module performs the capturing and recording actions based on the specific criteria requested by the UI and sends the data to the server. In the event that the client can not connect to the server over GPRS, then the data is stored locally and is sent to the server whenever the GPRS connection is reestablished.

Unified Messaging System



The application is a versatile messaging system that enhances the functionality of the Microsoft Pocket PC 2003 based 'Pocket Outlook' to support unified messaging including E-mails, SMS/MMS, call management etc.

Platform

Embedded VC++ 4.0

Windows Mobile 2003 Phone Edition

Smartphone 2003 SDK

Winsock 2.0

winCE. NET 4.2

MSXML 3.0

SyncML v1.1 Protocol

OBEX (IrDA / Bluetooth)

SyncML Reference Toolkit

Application Overview

The applications is developed to augment the 'Pocket Outlook' to support E-mails, SMS/MMS, Instant Messaging, fax and call management functions within the same User Interface for WinCE.NET based Pocket PC. The 'client/server' based transport layer components support PC / PDA communication using protocols such as Object Exchange protocol (OBEX) over IrDA and Bluetooth protocols, Serial I/O, Winsock (TCP) / IrSock, SIR-Serial Infrared and virtual serial ports .

Implementation of a SyncML client (using the SyncML RTK) for Windows Mobile 2003 OS based Pocket PC & Smartphones is currently in progress. This client will be integrated with Pocket 'Inbox' client for synchronization with a desktop based SyncML Server. This would support synchronization of Emails, SMS, Call Logs, Contacts/Address Book and Journals etc.

The system includes

Support for creation of New Messages independent of type (SMS/Email or both), integrated Mobile Device to Desktop 'MS Outlook' Backup / Restore and Sync capabilities for PIM objects like calendar entries, To-do lists, contacts, SIM data, call logs, and SMS.

Support for an extended 'Pocket Outlook' style Address Book (contacts) interface and supporting external database with import/export capabilities from desktop Outlook/ Express, Support for both wireless (Bluetooth, IrDA, SIR, WLAN 802.11b, Wireless Modems) and wireline (Serial-RS232, USB, LAN) connectivity mediums for Device-To-Device/PC communication.

Support for subject/message Templates to simplify input, support for Graphic conversions to enable Send via SMS/MMS to Mobile Devices as well as PCs, support for Rules based message re-direction to specific Folders, support for Rules based Push / Pull Action / re-Action using SMS and/or Email.

Application Launcher Services Pack for Pocket PC



Developed as a 'customizable User Interface Shell' for Pocket PC 2002 OS, the system is a powerful and highly customizable applications launcher for Pocket PC devices.

Platform

eVC++ 3.0

Win32 API

Pocket PC 2002 SDK

XML

Win CE 3.0

Application Overview

The application acts as a 'services pack' and seamlessly integrates the functions of organizing files, viewing pictures, reading e-books etc. Providing users with a quick method for launching different applications through one program itself, the system offers easy operation with high speed execution. The application is equipped with numerous unique features designed for user convenience. Examples include four different view modes, customizable user interface with numerous skins (themes), special categories for various applications and 'Pop-up' & 'Tab' style category management with drag-and-drop support, among others. In addition to the preset categories, the system allows users to create new categories which get added immediately to the existing list. Besides providing extensive options for configuring and managing folders, files, images and applications, the system accurately displays phone stats like memory usage, battery life and Date/Time settings.

Technological Expertise



Platforms, frameworks and IDEs

Microsoft Windows CE 3.0 / 4.2 / 5.0 platform, MS Pocket PC 2000 / 2002 / 2003 / 5.0 Software Development Kits, Windows CE.NET, Windows Mobile 2003 OS - Phone Edition / Second Edition, MS Smartphone OS 2000 / 2002 / 2003 SDKs, MS WinCE Platform Builder 4.2 / 5.0, .NET Compact Framework, Embedded Visual Tools 3.0 / 4.0 / Visual Studio 6.0 / Visual Studio 2003 for Smart Device applications.

Programming languages

Embedded VC++ 3.0 / 4.0 (Win32 SDK / MFC), C, Visual C++ (SDK / MFC, ATL- COM), Windows API programming, Visual Studio 2005

Front End (GUI Design)

VC++, Embedded VC++, Embedded VB, Visual Basic .NET

Back End (RDBMS)

SQL Server 2000, SQL Server 2000 for CE, Pocket Access, CEDB, EDB

Application and Service Development

Active Template Library (ATL), C Libraries and Run-times Component Services (COM and DCOM), Microsoft Foundation Classes (MFC), Object Exchange (OBEX), Pocket Outlook Object Model (POOM) API, SQL Server CE 2.0, EDB, Standard SDK for Windows CE Microsoft® .NET Compact Framework

Communication and Service

Wired Local Area Network (802.3, 802.5) such as Ethernet (802.3) and Token Ring (802.5), Wireless Access Point (802.11) Support, Wireless LAN (802.11), Bluetooth version 1.1, IrDA, Dial Up Networking (RAS/PPP), Telephony API (TAPI 2.0), Windows Networking API/Redirector (SMB/CIFS), Windows socket programming (winsock 1.1 / 2.0, IrSock infrared extended sockets, Bluetooth socket communication), Client Server based applications, OBEX (over USB / IrDA / Bluetooth), Serial I/O, Winsock (TCP) / IrSock, virtual serial ports, SIR-Serial Infrared, Virtual serial port emulation IrCOMM / RFCOMM, USB, MS Activesync, Synchronization Mark-up Language (SyncML version 1.1), SyncML over OBEX, WSP and Http.



**GREY MATTER INDIA TECHNOLOGIES
PRIVATE LIMITED**
www.greymatterindia.com