

P-1752



WIRELESS REMOTE COMPUTER CONTROL USING MOBILE

By

C.SOUNDAPPAN

Reg. No 71203621052

of

KUMARAGURU COLLEGE OF TECHNOLOGY

Coimbatore

(Affiliated to Anna University)

A PROJECT REPORT

Submitted to the

FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING

*In the partial fulfillment of the requirements
for the award of the degree*

of

MASTER OF COMPUTER APPLICATIONS

June 2006

Kumaraguru College of Technology

Coimbatore

Department of Computer Applications

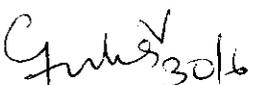
Bonafide Certificate

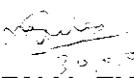
Certified that this project report titled **WIRELESS REMOTE COMPUTER CONTROL USING MOBILE** is the bonafide work of **Mr.C.SOUNDAPPAN (Reg No.71203621052)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


PROJECT GUIDE


HEAD OF THE DEPARTMENT

Submitted for the University Examination Held on 30 - 06 - 2006


INTERNAL EXAMINER


EXTERNAL EXAMINER

MNPL/ADMIN/66/06

02/06/06

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.C.Soundappan(71203621052), Kumaraguru College of Technology, Coimbatore has successfully completed the project titled **“WIRELESS REMOTE COMPUTER CONTROL USING MOBILE”** for our concern, under the guidance of Mr.T.Saravanan(Project Co-ordinator). His effort towards successful completion of the project from January 2006 to June 2006 is appreciable.

We wish him all the best in his future endeavors.

For MazeNet Technologies,


Swapna

(Administrator)

ABSTRACT

The advent of the cell phone as a tool for communication has spawned a host of technologies that attempt to merge the cell phone services with that of Internet services. This has led to a new area of IT called Mobile Computing. In spite of this new technologies that is being created almost an hourly basis, the major part of the cell owners have ordinary text-based cell phones.

The service attempts to give registered users an opportunity to control the computer connected to a mobile phone. The project follows the outline as follows: the command is SMSed to the mobile which is connected to the remote computer; the remote computer contains suitable software that provides phone and PC compatibility; the SMS command is queued and stored immediately in a database or text files. The system always scans for incoming SMS commands and to queue and store them immediately in database or text files.

Wireless Remote Computer Controller acts as a remote-control device for any computer connected to a mobile. The user can control the operating system and peripherals of any computer from any remote mobile. The control could be logging off, shutting down, opening/closing CD tray, capturing key-presses, launching various applications, etc. The report for control-logs for every operation performed on each computer is generated.

ACKNOWLEDGEMENT

I wish to express my sincere thanks to **Dr. Joseph V.Thanikal, Principal**, Kumara guru College of Technology, Coimbatore, for permitting me to undertake this project.

My deepest acknowledgement to **Dr.M.Gururajan**, HOD , Department of Computer Applications, Kumaraguru College of Technology, Coimbatore, for his timely help and guidance throughout this project.

I am greatly indebted to my internal guide **Mr.S.GaneshBabu**, Lecturer, Department of Computer Applications, Kumaraguru College of Technology, for his valuable guidance and encouragement at every stage of this project work.

I am very thankful to **Mr.Saravanan**, Project Leader, HCL Technologies, who rendered genuine support and timely technical help for better improvisation.

Finally I thank **my lovable parents and friends who helped** me in many ways during the course of project and have made it great success.

TABLE OF CONTENTS

Title	Page No
Abstract	iii
Acknowledgement	iv
List of Tables	vii
1. Introduction	1
1.1 Problem definition	2
1.2 System Environment	3
1.3 Organizational Profile	11
2. System Analysis	16
2.1 The Existing System	16
2.2 The Proposed System	17
2.3 System Requirement	19
2.4 System Analysis methods	20
3. System Design	23
3.1 Form Design	23
3.2 Input Design	24
3.3 Menu Design	25
3.4 Database Design	25
3.5 Code Design	26
3.6 Table Structure	28

4. Development of System and Testing	30
4.1 System Development	30
4.2 System Testing	31
5. Implementation	33
6. Conclusion	34
7. Suggestions for Future Work	35
APPENDICES	36
REFERENCES	40

List of Tables

Tables Name	Page No
3.6.1 PhoneNos Table	28
3.6.2 Command Table	29

CHAPTER 1

Introduction

The advent of the handheld devices and communication technology has emerged at enormous rate; this project aims to control the Personal Computer remotely with the help of handheld devices. We believe that handhelds can improve the user interfaces of many other devices, rather than just being another gadget to be learned.

What exactly is a 'handheld device'? We define a handheld device as a computerized, electronic machine that is designed to be held in one hand. The definition clearly includes calculators, organizers, pagers, mobile phones (generally called 'cell phones' in the US), and Personal Digital Assistants (PDAs) such as the Newton, Palm and PocketPC. All of these PDAs are designed to fit into one hand, and have a touch-sensitive screen on which a stylus can write. The built-in functions include a calendar, address book, a 'to-do' list, and memo pad for taking notes. These devices are programmable, and it is relatively easy to add other applications that can be downloaded from the Internet.

We have created the applications that allow a handheld device to provide input and serve as the output to control applications running on a PC.

For example, in design reviews, brainstorming sessions, and organizational meetings, a PC is often used to display slides or a current plan, and the people in attendance provide the input. Our Remote Commander application allows each person to use their mobile phone to control the PC's cursor and keyboard input from their seat. This will allow each person to participate without having to jump up and grab the PC's one mouse and keyboard.

1.1 Problem Definition

The latest technology has got lot of benefits like the advent of handheld devices make the job easy as, we can carry all our work in such devices wherever we go. But still we can have some drawbacks in it as the large storage capacity, multi-language support, and adjustable display and so on. In short these devices can not completely replace our Computer. We can not rely on it. These devices are used in addition to computers that means ultimately we are rely on computer and due to mobility we are using this kind of handheld devices. This problem is considered in this project as follows:

- Handheld devices can not replace computer as such
- They are used in addition with computer for mobility
- This system provides remote access of computer with handheld devices. i.e computer is at home or offices you can have control over it with help of mobile phones.

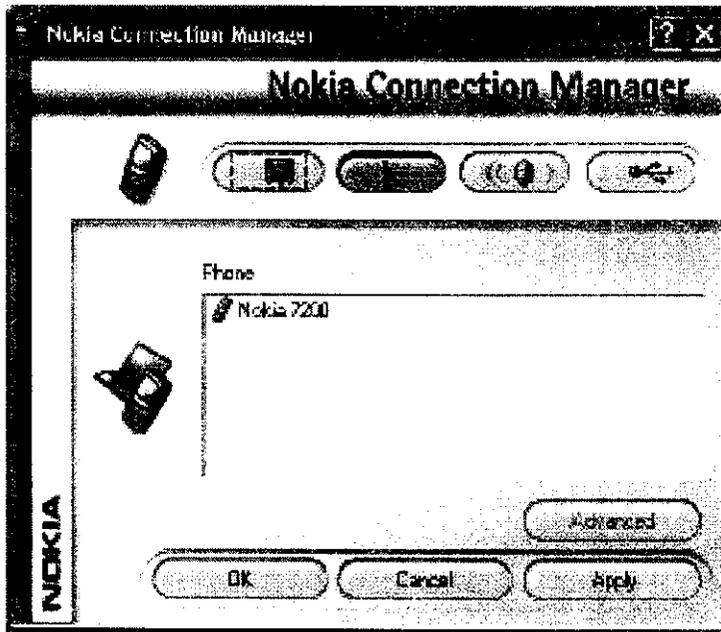
1.2 System Environment

This project connects a mobile phone with computer and with help of another mobile we can control the computer remote by sending command through Short Messaging System to the mobile connected to the computer. Our environment consists of PC with mobile connected in it and other mobile is to control remotely. This make use of SMS Gateway Software to connect your PC with mobile phone. Here we are using Nokia PC Suite 5.8 software to make the connection. First this software is installed in our computer . The Nokia PC Suite 5.8 supports the following Nokia phones:

- Nokia 7200 Phone
- Nokia 6230 Phone
- Nokia 3100 Phone
- Nokia 3200 Phone
- Nokia 5100 Phone
- Nokia 6100 Phone

Nokia Connection Manager allows you to choose the connection type used when connecting your PC and your phone.

When a connection type is selected (highlighted in green) it shows the phone that is connected to your PC. If you have multiple connection types selected, you can select



the correct phone by selecting it from the list and clicking Apply. The currently selected phone has a small phone icon on the left side.

With Nokia Phone Browser, you can manage the contents of some of your phone's folders through Windows Explorer, as well as open other PC Suite applications from there.

Nokia Phone Editor allows you to manage various phone functions easily from a PC. Phone book application allows you to manage contact information in your phone and PC memories. You can add and edit contacts, copy and move contacts from one memory to another, and send business cards as text messages to other GSM subscribers.

After installation of this software actual connection of PC and mobile is established with USB Cable and USB port .Now PC can respond for the command which is SMSed to the mobile which is connected to it.

Front end used:

Microsoft Visual Basic . Net used as front end tool. The reason for selecting Visual Basic dot Net as front end tool as follows:

- Visual Basic . Net has flexibility , allowing one or more language to interoperate to provide the solution. This Cross Language Compatibility allows to do project at faster rate.
- Visual Basic . Net has Common Language Runtime , that allows all the component to converge into one intermediate format and then can interact.
- Visual Basic . Net has provide excellent security when your application is executed in the system
- Visual Basic .Net has flexibility, allowing us to configure the working environment to best suit our individual style. We can choose between a single and multiple document interfaces, and we can adjust the size and positioning of the various IDE elements.
- Visual Basic . Net has Intelligence feature that make the coding easy and also Dynamic help provides very less coding time.
- The working environment in Visual Basic .Net is often referred to as Integrated Development Environment because it integrates many different functions such as design, editing, compiling and debugging within a common environment. In most traditional development tools, each of separate program, each with its own interface.
- The Visual Basic .Net language is quite powerful – if we can imagine a programming task , and accomplished using Visual Basic .Net

- After creating a Visual Basic . Net application, if we want to distribute it to others we can freely distribute any application to anyone who uses Microsoft windows. We can distribute our applications on disk, on CDs, across networks, or over an intranet or the internet.
- Toolbars provide quick access to commonly used commands in the programming environment. We click a button on the toolbar once to carry out the action represented by that button. By default, the standard toolbar is displayed when we start Visual Basic. Additional toolbars for editing, form design, and debugging can be toggled on or off from the toolbars command on the view menu.
- Many parts of Visual Basic are context sensitive. Context sensitive means we can get help on these parts directly without having to go through the help menu. For example, to get help on any keyword in the Visual Basic language, place the insertion point on that keyword in the code window and press F1.
- Visual Basic interprets our code as we enter it, catching and highlighting most syntax or spelling errors on the fly. It's almost like having an expert watching over our shoulder as we enter our code.

Back End Used

Microsoft Access is used as a back end tool. Microsoft access is a relational database management system designed for the graphical environment of windows that leads to organize and store pieces of information in an electronic file so that they are easier to find and use.

Database management system (DBMS) consists of a collection of interrelated data and a set of programs to access those data. The collection of data is known as database, which contains information about one particular enterprise. The primary goal of DBMS is to provide an environment that is both convenient and efficient to use in retrieving and storing database information.

A major purpose of database system is to provide users with an abstract view of the data. A database system provides two different types of languages. They are, Database Definition Language, which is used to specify the database schema, and the Data Manipulation Language, this is used to express database queries and updates.

A Relational database consists of collection of tables, each of which is assigned a unique name. A row in a table represents a relationship among a set of values. SQL (Structured Query Language) is the standard relational database language. The language has different parts such as, data definition language (DDL), Interactive data manipulation language (DML), Embedded

structure of an SQL expression consists of three clauses: select, from and where.

MS Access structures a database both logically and physically. A Database logical structure is a set of tables in the database. A database physical structure is the set of operating system files that store the bits and bytes of the database information on disk.

MS Access provides the ability to store and access this data in a manner consistent with the defined model known as the Relational model. So MS Access is referred to as a Relational Database Management System (RDBMS).

MS Access 8.0 is an Object Relational Database Managements System (ORDBMS) it offers capabilities of both relational and object oriented database systems. MS Access products are based on the concept known as the client / server technology.

ABOUT THE MS ACCESS

Database management system provides the following services

ACCESS DATA TYPES

- Text** letters, characters or any numbers with no Calculations are done.
- Memo** a note or text in detail or remind to do something.
- Number** number with which calculations can be done.
- Date/time** the data or the time.
- Currency** a unique incremented number access assigns to each record as it is created
- Boolean** a true/false, yes/no or other two-choice answer to a simple question.
- OLE objects** an embedded object, for example a spreadsheet or document from another program, a graphical or even a small piece of digitized footage.

ADVANTAGES OF ACCESS

Separating the data into several tables has a number of advantages. One is that it allows to use the access security features the restrict access to certain pieces or type of data using multiple tables; it also avoids storing empty, meaning less fields in the tables.

Access also includes a no of wizards, soper natural tools that allow to crate the most commonly used access objects in the blink of an eye by simply answering a few questions as they appear in the dialog boxes.

Main Elements of Access

Access is an object oriented program. Objects and Modules provide information and programs, which the user can use directly to create applications. Access has the following objects:

- **Database Window** In Access, all objects of a database are stored in a single file and the file name has an MDB extension. These objects are managed through the Database Window.
- **Tables** Tables are the primary building blocks of the Access database. All data are stored in tables. Every table in the database focuses on one object. The data is organized into fields and records.

CREATING THE DATABASE IN ACCESS

The basic steps are pretty simple. They follow the same logical order as the steps to plot the pieces of database on paper.

1. Create a database file to hold all the objects in a database.
2. Create the tables and then by setting up the fields and records.
3. Define relationship and establish links between the tables.
4. Enter data (using either the data sheet or a convenient data entry form).

1.3 Organization Profile

Maze Net Technologies has emerged as IT Solutions Company and today it's providing application migrations/solutions and re engineering for turn key projects. Maze Net's offerings range from cross-platform migrations, software development, and outsourced product development to application maintenance with a rich talent pool of about 35 associates.

Maze Net Technologies has its corporate office and development centers in Coimbatore, Tamilnadu (India).

Our Vision

To continue to be the leader in providing IT solutions to customers worldwide and be a partner in their Information Technology Management to enhance efficiency and productivity.

To be a vibrant, customer-oriented, quality driven, state of the art Technology Company.

Creating value to employees, customers, shareholders and society

Maze Net Solution has emerged as global IT Solutions Company and is in application migrations and application re engineering. Maze Net specializes in forming a long term "Working Partnership" with your company, to provide the technical resources and tools necessary for addressing all your IT requirements.

Maze Net's portfolio of services emanate from its understanding of the market needs and the technology direction to provide the right solution at the right time to enable our customers manage their IT evolution at a time when the IT services life cycle is getting shorter with every passing day.

In the process, we help in improving our customer's productivity and help them to keep up with the latest technology changes. Our services cater with latest technologies such as Java, J2EE, .Net framework, Perl, PHP, .Net mono.

We also offer on-site consulting that includes system and database design, and application development and maintenance on a variety of platforms. Our technical experts develop and maintain systems as per client specifications. This consultative approach provides a risk-free, cost-effective way for an organization to design, develop, and/or maintain cutting edge information systems. We have expertise in Oracle, DBA, Java Scripts, J2EE, Perl, PHP, .Net Frame Work, PowerBuilder/Oracle, Visual Basic/Oracle, DB2, COBOL, C, C++, Windows SDK, Linux etc.

Quality

Quality is universally recognized as the backbone of any company's operations and Maze Net has taken several initiatives to streamline product development and project delivery processes to bring them in sync with international quality standards.

The responsibility of initiating and sustaining quality improvement programs has been entrusted to a Quality Department and process Groups within the company. An internal Quality Assurance Group further verifies the implementation of these quality programs.

The Quality Department in Maze Net is responsible for the development of processes, monitoring the progress of the process development effort, ensuring that the outputs are formally reviewed and arrange for the incorporation of the finalized process documents into the Quality System of the organization. Additionally, the Quality Department also defines the standards for the process

their compliance with the policy directives of the Quality Department.

As part of their effort to propagate quality awareness within the organization and introduce quality standards in all of Maze Net's dealings, the Quality Department is adopting a four-tier strategy of customer focus, people focus, process focus and predictability improvement. The customer focus is intended at contributing to the creation of customer relationships that endure beyond the end of assignments while the people focus aims at building a learning organization to manage the demands of rapid technological changes. The process focus will bring about process focus through well-defined, institutionalized processes and finally, Maze Net would also work towards improving the predictability of delivery time, effort and quality of delivery.

Project Methodology

At Maze Net, we have made the art of migration, a science with a long list of success stories. Managed by the most innovative minds, led by highly experienced professionals and supported by a very talented delivery team, Maze Net is committed in providing the best quality solutions to its customers. Project Delivery in Maze Net comprises four major phases each of which has various sub steps aimed at producing high quality, cost effective results. Aiming to achieve the best results and optimum customer comfort, Maze Net follows the unique CTM Model. CTM (Continuity Team Member) ensures continuous contact between customer and the off site team during the entire project life cycle.

During phase1, the original application is analyzed by the CTM to pinpoint the enhancements that could be made during migration. The dependencies are resolved, probable problem areas are identified and after repetitive discussions with the user, a migration framework is designed. At Maze Net this framework is called Final System Document (FSD) based on which the migration is carried out. Sample Forms and/or Reports are developed which is used to obtain user inputs and the FSD is optimized. This FSD and the final version of the samples,

During phase 2, Migration and Unit Testing, the CTM interacts with the off site team and based on the FSD and samples, derives inputs to the migration tool and formulates a migration strategy for the application. The Application is migrated, unit testing is done and after certification from the quality department, the migrated units are shipped back to the customer.

During phase 3, Customer Testing, the migrated application is delivered to the customer who tests the application. Application bugs, which arise due to environmental and related reasons, are sorted out and the delivery process is completed.

During Phase 4, Sign Off and Maintenance, signifies completion of the Project. Maze Net enters into an optional maintenance contract if the customer desires so for a certain period of time.

.NET

We recommend .NET framework as a preferred solution for our clients as the ROI in migrating your legacy applications to a .NET framework based application is much faster than any other technologies prevalent in the market.

Microsoft.NET is a revolutionary new platform, built on open Internet protocols and standards, with tools and services that meld computing and communications in new ways. With .NET, Microsoft presents a new platform of which the goal is to develop Web applications simply inter operable, resting on a completely new architecture. For Microsoft, .NET will make it possible to program the Web, neither more, nor less. Microsoft .NET is Microsoft's XML Web services platform. .NET contains all that's needed to build and run software based on XML, the lingua franca of Internet data exchange. Microsoft .NET solves several core problems underlying software development today.

Some of the fallacies of legacy systems that corporations are looking towards arresting

- ❑ Limited scalability and system administration problems
- ❑ Inaccurate, incorrect or non-existent support artifacts, such as Requirements, or Design documents
- ❑ Enormous maintenance costs - incurred primarily to rectify bugs that are either inherited or introduced during production support and/or modifying the software to keep it current with business needs
- ❑ Inflexibility to changing business, market, and end-user needs
- ❑ Lack of user-friendliness

Adopting .NET as the solution of choice, organizations can

- ❑ Tightly coupled client server environment to a loosely coupled distributed web environment.
- ❑ Platform independence and scalability, allowing applications to run without modification on all kinds of devices big and small
- ❑ Intelligent graphical user interfaces, consistent across all platforms
- ❑ Reduced time and cost of software development, and software reuse via COM+ the Microsoft plug-and-play component architecture
- ❑ Centralized software and network management, cutting desktop administration to zero or near-zero
- ❑ Secure network delivery

CHAPTER 2

System Analysis

2.1 Existing System:

With the advent of emerging technology, lot of new arrivals like PDA, laptop can make the things easy by way of ease in carrying. Also we can make use these devices where ever we go.

This technology has got benefits like: Due to the small physical size of these devices they often possess the latest and most compact user interfaces such as touch screens, hand writing recognition, or miniature keyboards [both on-screen and attached to the device].

But also has some problems as listed below:

- Does it have expandable memory?
- Is there add-on software available for it?
- Do you have multi-language support?
- Is it compatible with your home computer's platform?
- Does it have an adjustable display?
- Does it have large storage capacity?

For above reasons even though have devices like this we rely on our computer. But with computer due to size it can not be carried easily. So this project aims to make use the computer remotely with the help of mobile phone.

2.2 Proposed System:

Our system is proposed to make use of computer remotely so that this can overcome flaws in the existing system. This system makes use of mobile phone as interface for user to access the computer remotely. The advent of the cell phone as a tool for communication has spawned a host of technologies that attempt to merge the cell phone services with that of Internet services. The Wireless Remote Computer Controller performs the following:

- Initially our computer should be connected to the mobile phone by SMS Gateway which provides interface between the Mobile and PC.
- A list of users who can control the remote computer through SMS has to be registered.
- Our system listens for incoming SMS from remote user to the mobile connected to PC is monitored and it identifies the commands.

- The action is performed against the command on the PC.

Also log file is maintained to monitor the user who remotely accessed the PC and the operations which is performed on it.

Wireless Remote Computer Controller acts as a remote-control device for any computer connected to a mobile.

2.3 System Requirement

Hardware specifications:

Processor	:	Intel Processor IV
RAM	:	128 MB
Hard disk	:	20 GB
CD drive	:	40 x Samsung
Floppy drive	:	1.44 MB
Monitor	:	15' Samtron color
Keyboard	:	108 mercury keyboard
Mouse	:	Logitech mouse

Software Specification

Operating System – Windows XP/2000

Language used - Visual Basic .NET.

Software Requirement:

To control computer remotely with mobile, we are connecting a mobile phone to computer. For this we need

Mobile phone,

USB cable, USB port,

SMS gateway software, as tool for interface.

2.4 System Analysis Methods

System analysis can be defined, as a method that is determined to use the resources, machine in the best manner and perform tasks to meet the information needs of an organization. It is also a management technique that helps us in designing a new systems or improving an existing system. The four basic elements in the system analysis are

- Output
- Input
- Files
- Process

The above-mentioned are mentioned are the four basis of the System Analysis.

Feasibility Study

Feasibility is the study of whether or not the project is worth doing. The process that follows this determination is called a Feasibility Study. This study is taken in right time constraints and normally culminates in a written and oral feasibility report. This feasibility study is categorized into seven different types.

They are

Technical Analysis

Economical Analysis

Performance Analysis

Control and Security Analysis

Efficiency Analysis

Service Analysis

Technical Analysis

This analysis is concerned with specifying the software that will successfully satisfy the user requirements. The technical needs of a system are to have the facility to produce the outputs in a given time and the response time under certain conditions..

Economic Analysis

Economic Analysis is the most frequently used technique for evaluating the effectiveness of prepared system. This is called Cost/Benefit analysis. It is used to determine the benefits and savings that are expected from a proposed system and compare them with costs. If the benefits overweigh the cost, then the decision is taken to the design phase and implements the system.

Performance Analysis

The analysis on the performance of a system is also a very important analysis. This analysis analyses about the performance of the system both before and after the proposed system. If the analysis proves to be satisfying from the company's side then this analysis result is moved to the next analysis phase. Performance analysis is nothing but invoking at program execution to pinpoint where bottle necks or other performance problems such as memory leaks might occur. If the problem is spotted out then it can be rectified.

Efficiency Analysis

This analysis mainly deals with the efficiency of the system based on this

are analyzed in this phase. It is also checks how efficient the project is on the system, in spite of any changes in the system. The efficiency of the system should be analyzed in such a way that the user should not feel any difference in the way of working. Besides, it should be taken into consideration that the project on the system should last for a longer time.

CHAPTER 3

System Design

Design is concerned with identifying software components specifying relationships among components. Specifying software structure and providing blue print for the document phase.

Modularity is one of the desirable properties of large systems. It implies that the system is divided into several parts. In such a manner, the interaction between parts is minimal clearly specified.

Design will explain software components in detail. This will help the implementation of the system. Moreover, this will guide the further changes in the system to satisfy the future requirements.

3.1 Form design

Form is a tool with a message; it is the physical carrier of data or information. It also can constitute authority for actions. In the form design files are used to do each module. The following are list of forms used in this project:

Main Form

This form is the main home form for the navigation through this application. The user can return to this home and register the phone numbers through which this application can be accessed remotely. Here two provisions are given one for configuring phone numbers and the other one is option acts as a controller.

Configuration phone form

This acts as mobile user registration form. The system maintains a list of users who can control the remote computer through Short Messaging System. Here the provisions are given for edit, update and delete options. The phone numbers are entered along with the user name and stored in the database. When the SMS arrives to the phone connected to the PC, it retrieves list of user from the table and it displays along with user name stored in the database.

Controller Form

This form allows you to access SMS send to the mobile and display from whom it is received and what command it has to perform in provision given in the form. After this the command will get executed in the PC.

3.2 Input design

Inaccurate input data is the most common case of errors in data processing. Errors entered by data entry operators can control by input design. Input design is the process of converting user-originated inputs to a computer-based format. Input data are collected and organized into group of similar data.

3.3 Menu Design

The menus in this Wireless Computer Remote Controller Using Mobile are implemented in the main form which is container of frmPhoneNo, frmCommands, frmPIN, frmReceiveOption, frmSendOption etc.

The frmmain contains button Start, it is started initially to listen the

displays in the list box Sender and Message information. Similar way once the message received and particular process activated then the response message is given to the sender. This involves provide Recipient and Message details and click send button so that the message may be conveyed to the user.

In this way this application gives interaction between application and the user in the remote location.

3.4 Data base design:

A database is a collection of related data. The database has following properties:

- i. Database reflects the changes of the information.
- ii. A database is logically coherent collection of data with some inherent meaning.

The Table as follows:

- ✓ PhoneNos Table : Contains two field
 - Mobile No and User name.
- ✓ Command Table: Contains only one field.
 - This is list of command that can be remotely executed from mobile by giving this as SMS.



3.5 Code Design

- ✓ Mobile User Registration

The system maintains a list of users who can control the remote

gets stored in table PhoneNos in dbwireless database. This information can be altered and at any time new entries can be made.

✓ SMS Gateway:

Provides interface between the Mobile and PC. This application make use of Nokia PC Suite 5.8 software to make the connection. This software acts as interface between the PC and the mobile phone. Initially Nokia Connection Manager establishes connection between them.

Nokia PC Suite 5.8 features the following applications:

- Nokia Connection Manager
- Nokia PC Sync
- Nokia Phone Editor
- Nokia Phone Browser
- Nokia Settings Manager
- Nokia Content Copier
- Nokia Application Installer
- Nokia Image Converter
- Nokia Sound Converter
- Nokia Modem Options
- Nokia Multimedia Player
- Nokia Audio Manager

✓ SMS Monitor

Listens for incoming short messages from a remote user to the mobile, connected to the PC. This monitor acts as delegate for arrival of SMS from mobile connected to the PC.

✓ Command Interpreter

Identifies the keywords as commands against a list of acceptable controls that can be performed. Here command interpreter programmatically designed to accept the keyword and identifies the command, accordingly the action is performed by PC.

✓ ControlLog

The set of operations remotely performed by each user is compiled into a log, and is generated as a report. What are all the user has given Short Message to that mobile is gets copied into log files along with the operation that they performed remotely.

3.6 Tables Structure

3.6.1 PhoneNos Table

PhoneNos : Table	
Field Name	Data Type
PhoneNo	Text
UserName	Text

PhoneNos : Table	
PhoneNo	UserName
+919894104858	vasanth
+919894821188	divagar
+919894855887	singaram
+919994233720	nirmal
*	

3.6.2 Command Table

Commands : Table	
Field Name	Data Type
Command	Text

Commands : Table	
Command	
cpldtccfg	
cplFindfast	
cplInetcpl	
cplIntl	
cplJoy	
cplMain	
cplMicfg32	
cplMmsys	
cplmxctlpnl	
cplNetcpl	
cplOdbccp32	
cplPassword	
cplPowercfg	
cplSticpl	
cplSysdm	
cplTelephon	
cplTimedate	
logoff	
restart	
shutdown	

Record: 1 of 24

CHAPTER 4

Development of System and Testing

4.1 System Development

This system is developed with front end Visual Basic . Net and back end as MS Access. Also SMS gateway software Nokia PC suite 5.8. All the form modules and program modules are developed with Visual Basic . Net , which helps to easily invoke operating system operation from the application program.

Initially remote user's mobile numbers are registered and stored in the database. Only the valid mobile numbers can be remotely access or control the computer.

The interface between PC and mobile is exist just because of we installed SMS Gateway Software. Now to access the Short Message from the mobile this application includes the tool called "ActiveXpert SMS and Pager Toolkit". This is include by right-clicking the References option in Project Explorer Window and select "Add References" and choose "COM" tab and then choose "ActiveXpert SMS and Pager Toolkit" from the list and then press "Select" button and then "Ok" button.

Using this tool SMS from mobile is received by the remote PC by Receive() method of this tool object. This object also contains properties for getting sender and receiver information. By this the SMS is received and displayed in the text box appears in the controller form.

Now to execute the command, we make use of System.Management namespace. This namespace contains method like CreateProcess(), it takes to parameter. First parameter takes the content of text box and second parameter

tells where to execute it i.e. location. By using this method SMS keyword is taken as command and executed by his application program.

4.2 Software Testing

Software Testing is the process of confirming the functionality and correctness of software by running it. Software testing is usually performed for one of two reasons:

- 1) Defect detection
- 2) Reliability estimation.

The problem of applying software testing to defect detection is that software can only suggest the presence of flaws, not their absence (unless the testing is exhaustive). The problem of applying software testing to reliability estimation is that the input distribution used for selecting test cases may be flawed. In both of these cases, the mechanism used to determine whether program output is correct is often impossible to develop. Obviously the benefit of the entire software testing process is highly dependent on many different pieces. If any of these parts is faulty, the entire process is compromised.

Software is now unique unlike other physical processes where inputs are received and outputs are produced. Where software differs is in the manner in which it fails. Most physical systems fail in a fixed (and reasonably small) set of ways. By contrast, software can fail in many bizarre ways. Detecting all of the different failure modes for software is generally infeasible.

The key to software testing is trying to find the myriad of failure modes something that requires exhaustively testing the code on all possible inputs. For most programs, this is computationally infeasible. It is commonplace to attempt

of resource constraints) are called *white box* software testing technique. Techniques that do not consider the code's structure when test cases are selected are called *black box technique*.

Functional testing is a testing process that is black box in nature. It is aimed at examine the overall functionality of the product. It usually includes testing of all the interfaces and should therefore involve the clients in the process.

Final stage of the testing process should be System Testing. This type of test involves examination of the whole computer system, all the software components, all the hard ware components and any interfaces.

The whole computer based system is checked not only for validity but also to meet the objectives.

CHAPTER 5

Implementation

As per the information given in the software development portion this system provides remotely control the computer with help of mobile i.e. wireless device taken as control device. This system is implemented in the windows XP operating system and Nokia PC suite 6.5 gateway interface. The mobile which is connected to computer is Nokia 3100 model. After all the setup operations the Short Message is given to Nokia 3100 mobile from another mobile, which is already registered in this application.

This application can able to perform any command that can be understood by Command Interpreter. With this application can able to open applications and editor like Notepad, MS Word etc. control could be logging off, shutting down, opening/closing CD tray, capturing key-presses etc.

The report for control-logs for every operation performed on each computer is generated.

CHAPTER 6

Conclusion

Our system is proposed to make use of computer remotely so that this can overcome flaws in the existing system. This system makes use of mobile phone as tool for user to access the computer remotely. The application is developed successfully and implemented as mentioned above.

This system seems to be working fine and successfully. This system can able to provide the user to control the operating system and peripherals of any computer from any remote mobile. The control could be logging off, shutting down, opening/closing CD tray, capturing key-presses, launching various applications, etc. All the above operations are working fine with user satisfaction.

The report for control-logs for every operation performed on each computer is generated properly. This report can be generated from control log. So the history of operations is also maintained by the system successfully.

Suggestions for Future Work

As this system satisfies the user requirement, this can be enhanced further.

The suggestion for future work is as follows:

- ❖ With this as implementing tool it can be used to control an specific application running in remote location.
- ❖ Same thing can be extended for editing and formatting options.
- ❖ Can be improved in programming aspect
- ❖ Can also be used to run system operations
- ❖ For task assignment etc.
- ❖ Can be improved to execute sequence of command which can be combined and given as Short Message

Appendices

Appendix-1

Wireless Remote Computer Controller

GSM Modem/Phone Connection Properties

Device: Device Speed:

Send Message

Recipient:

Message:

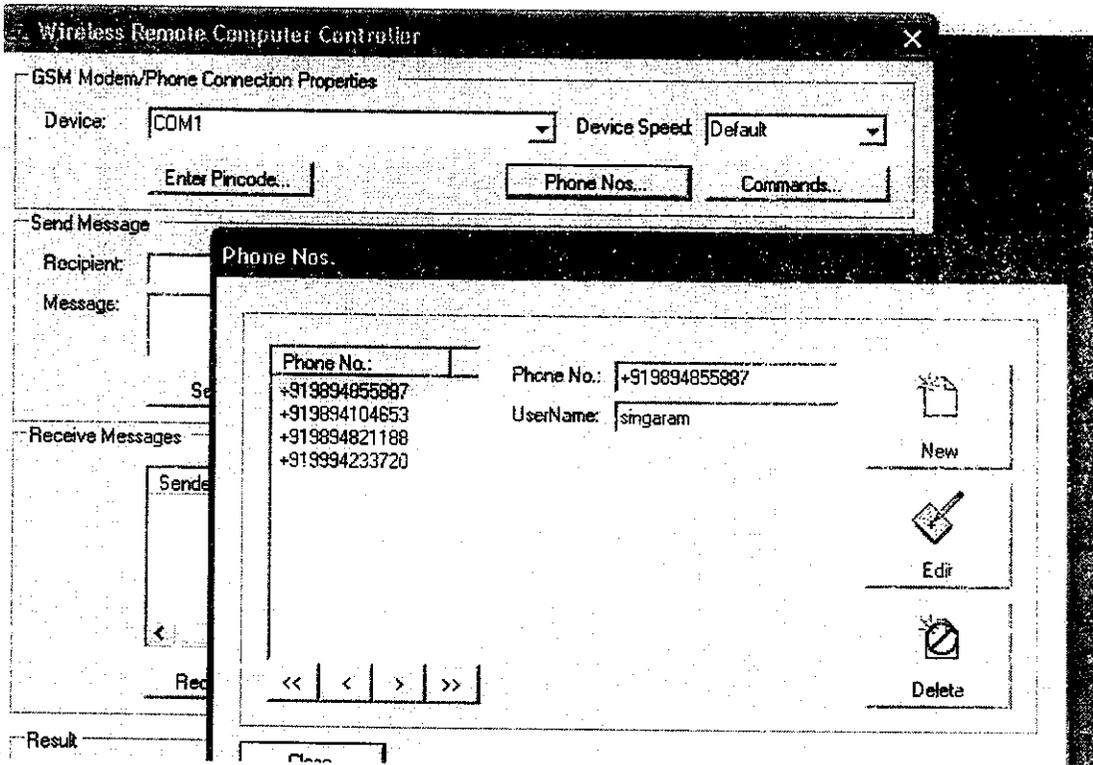
Receive Messages

Sender	Message

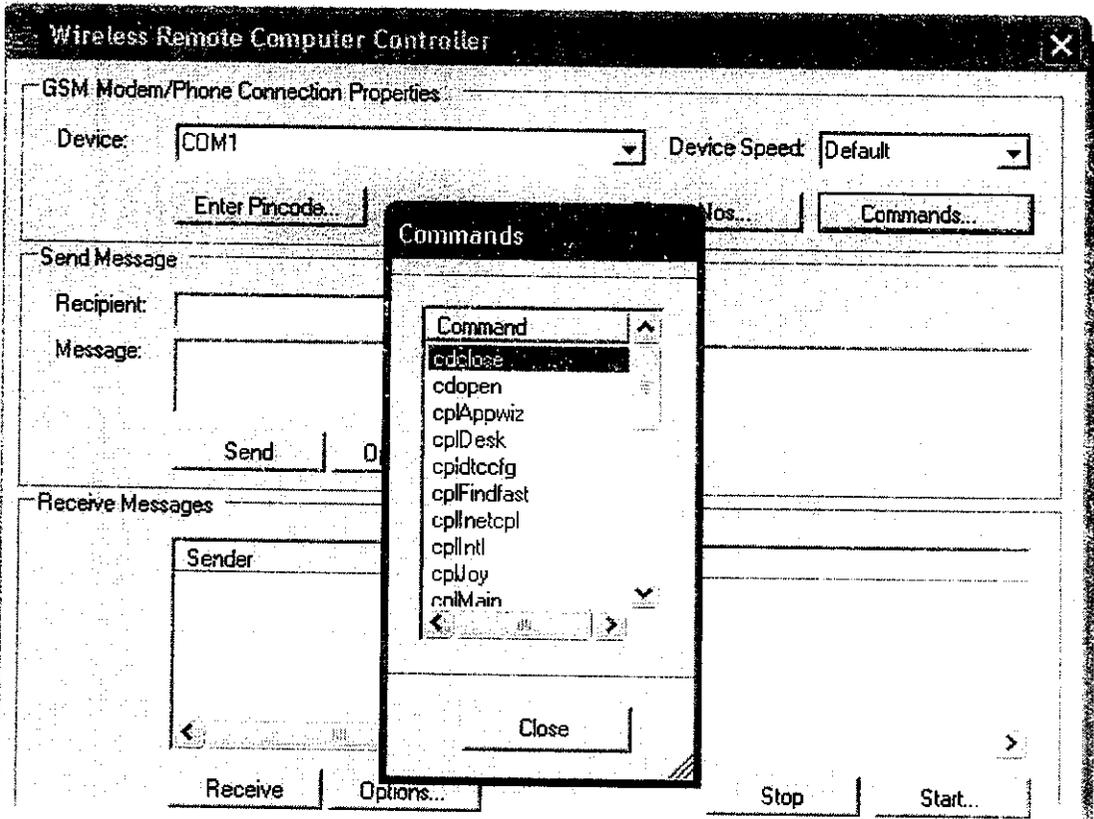
Result

Result:

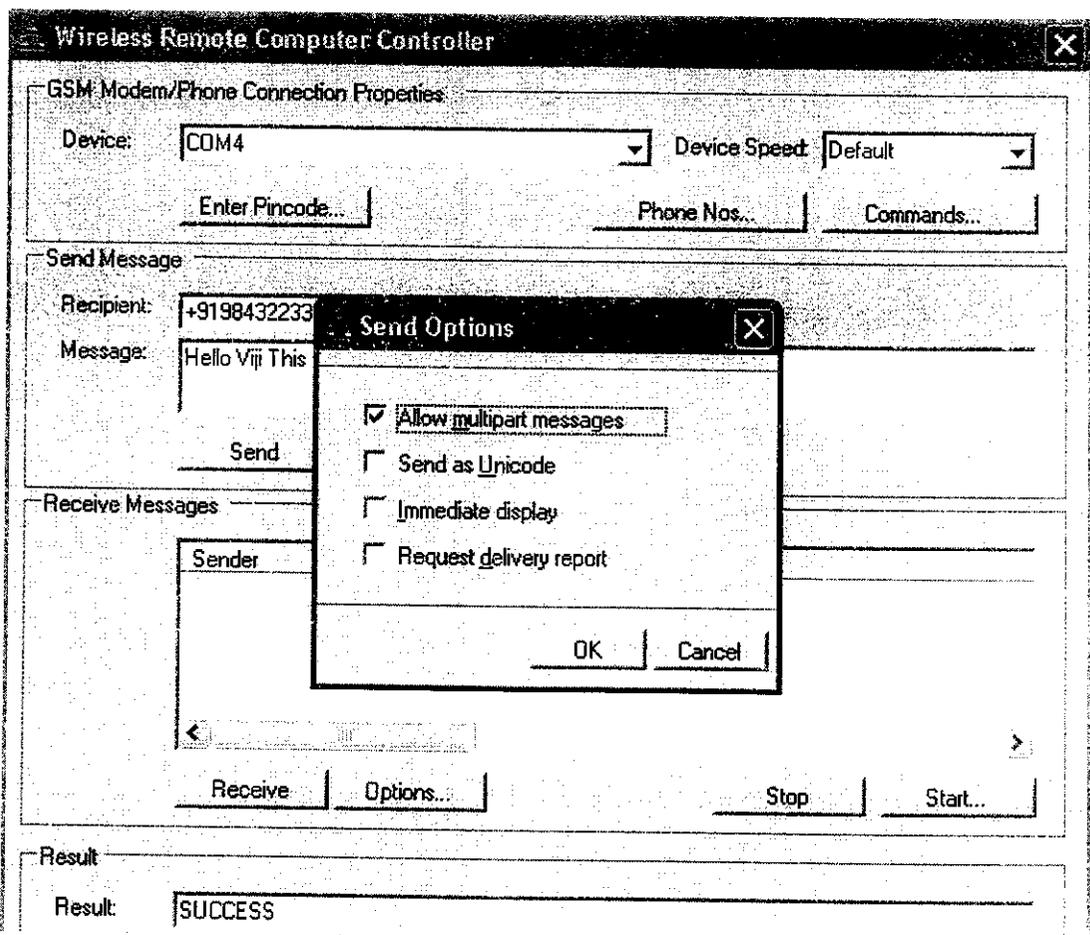
Main form



Main Form that Invokes PhoneNo Form



Main Form invokes Command form



Send options to send the messages

References

1. Steven Holzner , “Visual Basic .Net Programming “ Black Book -
Dream Tech Press, New Delhi
2. Visual Basic Programmer's Cook Book
- 3.. Microsoft MS Access – User manual.
4. Roger.S.Pressman “ **Software Engineering A Practioners Approach ”**
Tata McGraw Hill Edition
5. Lee “ **Introduction to System Analysis and Design”**
Galgotia Book Source Publications