

PC Control Using Android

*A Mini project Report
submitted in partial fulfilment of
the requirements for the award of the degree of*

Bachelor of Technology
in
Computer Science and Engineering
(University of Calicut)

by
Amrutha K. V.(14BCS12163)



Department of Computer Science & Engineering
MES College of Engineering, Kuttippuram
(ISO 9001 : 2000 Certified Institution, Affiliated to University of Calicut)
Thrikkanapuram PO, Malappuram Dt, Kerala - 679573
2015-16

Certificate

This is to certify that the mini project report entitled “PC Control Using Android” is a bonafide record of the work done by Amrutha K. V. (Reg no: 14BCS12163), under our supervision and guidance. The report has been submitted to the Department of Computer Science and Engineering of MES College of Engineering, Kuttippuram in partial fulfilment of the award of the Degree of Bachelor of Technology in Computer Science and Engineering, during the year 2015-16.

Dr. Mredhula L.
Professor and Head
Dept.of Computer Science and Engineering
MES College of Engineering

Mr Sherikh K. K.
Project Guide
Assistant Professor
Dept.of Computer Science
and Engineering
MES College of Engineering

Abstract

PC Control is a mobile application software for parents to monitor and control their child PC remotely. It enables one to monitor the remote machines desktop and thus control it with their android touch pointer. It can be used with Microsoft Windows to perform real time remote system control and administration tasks through different network environments. This application software requires a TCP/IP connection between the server and the client, which works either in LAN's or in WAN's; even on internet if one provides a IP address for their machine. When the connection between a client and a server is first established, the server begins by requesting authentication from the client using an authentication, which typically results in the user being prompted for a user name and password at the client end. It does, however, provide the primary user of a PC with remote access to their desktop. There will be an option to send messages to the server machine; these messages will be notified on the server screen. In addition to the control through desktop; there will be short cuts (i.e. single click actions) for power options.

Acknowledgements

First of all I wish to thank God Almighty for His blessings that made our work a success.

I am grateful to Dr.V.H.Abdul Salam, Principal, MES College of Engineering, Kuttippuram, for providing the right ambiance to do this project. I would like to extend our sincere gratitude to Prof. Mredhula L. , Head of the Computer Science Engineering Department, MES College of Engineering, Kuttippuram.

I am deeply indebted to my mini project coordinators Ms.Farzana T. , Mr.Harikrishnan G. R. , and Mr.Sreekanth E. S. , for their continued support throughout my project.

It is with pleasure that I express my deep sense of gratitude to my project guide Mr. Sherikh K.K, Assistant Professor, Department of Computer Science, MES College of Engineering , Kuttippuram for his guidance, supervision, encouragement and valuable advice in each and every phase of my project.

I would like to thank all other faculty members and fellow students of MES College of Engineering, Kuttippuram for their warm friendship, support and help.

Amrutha K. V.

Contents

Chapter	
1	Introduction 1
1.1	Purpose 2
1.2	Scope 2
2	System Analysis 3
2.1	Existing System 3
2.1.1	Disadvantages 3
2.2	Proposed System 4
2.2.1	Features 4
3	System Design 5
3.1	Module Description 5
3.2	Data Flow Diagrams 5
3.2.1	Level 1 6
3.2.2	Level 2 6
3.2.3	Level 3 6
3.2.4	Level 4 7
3.2.5	Level 5 7
4	System Requirements 8
4.1	Software Requirements 8

	vi
4.1.1 Introduction to Eclipse	8
4.1.2 Introduction to TightVNC	8
4.1.3 Introduction to Microsoft Visual Studio	9
5 Implementation	10
5.1 Screen shots	10
5.1.1 User Interfaces	12
6 Conclusion and Future work	14
6.1 Conclusion	14
6.2 Future Work	15
 Appendix	
A Screen shots	16
 Bibliography	24

Figures

Figure

3.1	DFD-User Registration	6
3.2	DFD-User Login	6
3.3	DFD-Remote Desktop Access	6
3.4	DFD-Power Options	7
3.5	DFD-Send Message	7
5.1	Launcher	12
5.2	Terms and Conditions	13
A.1	User Registration	16
A.2	User Login	17
A.3	Connection Window	18
A.4	System Configuration	19
A.5	Home Options	20
A.6	Remote Desktop Access	20
A.7	Send Notification	21
A.8	Power Options	22
A.9	Message Notification	23

Chapter 1

Introduction

PC Control is a mobile application software for parents to monitor and control their child PC remotely. This application software enables one to monitor the remote machines desktop and thus control it with their android touch pointer. It can be used with Microsoft Windows to perform real time remote system control and administration tasks through different network environments.

This software requires a TCP/IP connection between the server and the viewer, which works on LAN's as well as WAN's; even on internet if you provide a public IP address for your machine. User will need to know the IP address or name of the server when a viewer wants to connect to it. The initial handshaking consists of Client Initialization and Server Initialization messages. When the connection between a client and a server is first established, the server begins by requesting authentication from the client using a challenge-response scheme, which typically results in the user being prompted for a username and password at the client end.

The server is designed to make the client as simple as possible, so it is usually up to the server to perform any necessary translations. Servers mirror the real display to a remote client, which means that the server is not 'multi-user'. It does, however, provide the primary user of a PC with remote access to their desktop. There will be an option to send messages to the server machine; these messages will be notified on the server screen. In addition to the control through desktop; there will be shortcuts (i.e. single click actions) for power options.

1.1 Purpose

Through the project PC Control mainly aim to develop a mobile client that can, permit remote network access to PCs graphical desktop. The software must enable to get a view of the remote machine desktop and control it with your android touch pointer. It can be used to perform remote system control and administration tasks in Windows computational environments with assorted network capabilities.

1.2 Scope

The PC Control app have a lot of social significance, since nowadays educational systems demands use of PC with internet for even school students, which may expose the teenager students to the traps of Internet. This app helps the parents to monitor and control their wards remotely. The environments are fully networked for various purposes and everyone have smartphones. This project tries to develop an administration system which works upon existing network and android smartphones.

Chapter 2

System Analysis

System analysis is the process of gathering and interpreting facts, diagnosing and using this information to recommended improvements to the system. The objectives of the system analysis phase are the establishment of the requirements for the system to be acquired, developed and installed. System analysis is for finding out what happens in the existing system deciding on what changes and features are required and defining exactly what the proposed system must be Analysis specifies what the system should do.

2.1 Existing System

Currently for parental control tasks in computational environments, using security system such as IPCam, false alarm etc. The environments are fully networked for various purposes and every user had network access according to his role. There also some earlier solutions for remote access such as Telnet, Symantecs PC anywhere, etc.

2.1.1 Disadvantages

Utilities like Telnet and remote control programs like Symantec's PC anywhere let you access remote systems. But using these solutions, the users are not able to access the desktop of the remote machine the user will never get the feeling that they are working in the remote machine. There is no provision to shut

down or reboot remote system, send messages to the server use the processor of the remote machine directly. These systems are highly expensive and renew every year.

2.2 Proposed System

PC Control is a client/server software package allowing remote network access to PCs graphical desktop. This software enables you to get a view of the remote machine desktop and thus control it with your android touch pointer. It can be used to perform remote system control and administration tasks in Windows computational environments with assorted network capabilities.

The mobile user will register by providing his username password through android application. The server access will be provided only for the registered users. There will be an option to send messages to the server machine; these messages will notified on the server screen using server foreground application. In addition to the control through desktop; there will be shortcuts (i.e. single click actions) for power options.

2.2.1 Features

- Communication based on TCP/IP.
- Accessing the PC using a smart phone.
- Select a PC from the network.
- Controlling applications in PC.
- Sending messages to the users who use the server.
- Controlling PCs power functions like Shut down, Sleep Hibernate.

Chapter 3

System Design

3.1 Module Description

Module description focuses on detailed implementation of the system recommended in feasibility study. It is transition from user-oriented document to programmer-oriented document. In the Module description firstly identified the main objects and operations involved in the PC control. In the identification process, listed out main levels in module description that play major roles in this app:- android design, android coding, server and notification. In the next step, the key roles these objects are identified with relationship to each other. The user name and password of new user after successful registration process will store in the database.

3.2 Data Flow Diagrams

A DFD, also known as a "Bubble Chart", has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of detail. Data flow diagrams are made up of a number of symbols, which represent system components. Most data flow modelling models include four symbols which represent four kinds of system components Processes, data stores, data flows and external

entities. Below figures shows various levels of DFD's. User registration shown in figure 3.1, user login shown in figure 3.2, remote desktop access shown in figure 3.3, power option shown in figure 3.4, and send message shown in figure 3.5.

3.2.1 Level 1

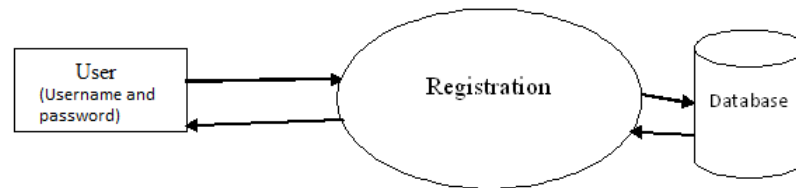


Figure 3.1: DFD-User Registration

3.2.2 Level 2

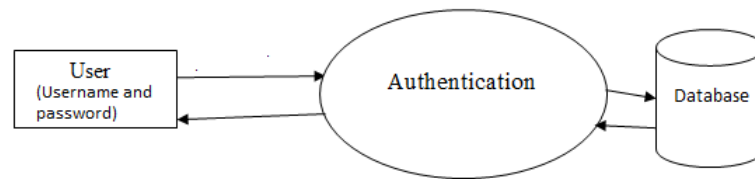


Figure 3.2: DFD-User Login

3.2.3 Level 3

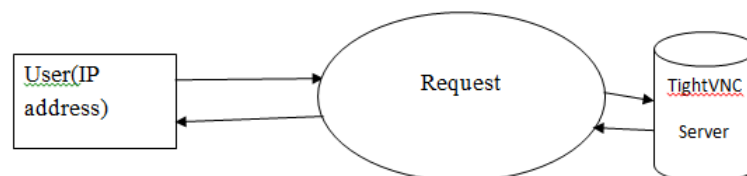


Figure 3.3: DFD-Remote Desktop Access

3.2.4 Level 4

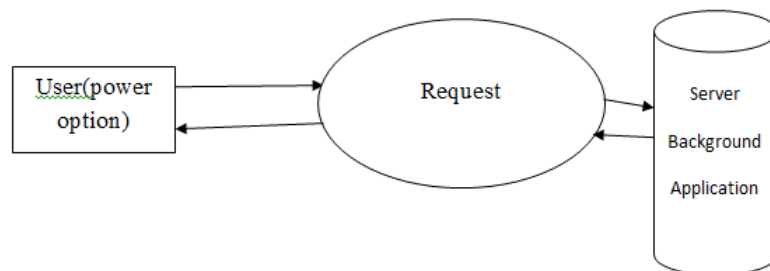


Figure 3.4: DFD-Power Options

3.2.5 Level 5

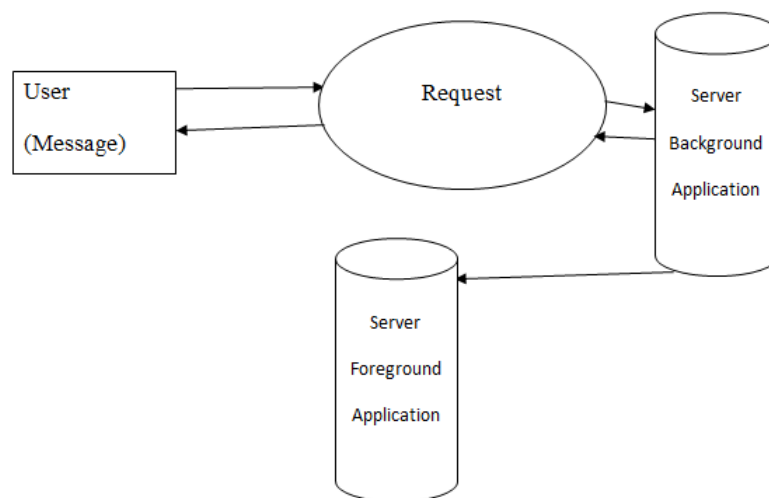


Figure 3.5: DFD-Send Message

Chapter 4

System Requirements

4.1 Software Requirements

- Operating System : Windows XP or above.
- Android : Android SDK, Android Eclipse, TightVNC library.
- Server Section : TightVNC server, Visual studio.

4.1.1 Introduction to Eclipse

Eclipse is an integrated development environment (IDE). It contains a base workspace and an extensible plug-in system for customizing the environment. Eclipse can be used to develop applications in Java. By means of various plug-ins, Eclipse may also be used to develop applications in other programming languages: Ada, C, C++, COBOL, FORTRAN, Haskell, JavaScript, Lasso, Perl, PHP, Python, R, Ruby (including Ruby on Rails framework), Scala, Clojure, Groovy, Scheme, and Erlang. Development environments include the Eclipse Java development tools (JDT) for Java and Scala, Eclipse CDT for C/C++ and Eclipse PDT for PHP, among others.

4.1.2 Introduction to TightVNC

TightVNC is a free remote control software package. It can be used to perform remote control and administration tasks in Windows, Unix and mixed

network environments. It also helpful in distance learning and remote customer support. Finally, one can find a number of additional VNC-compatible utilities and packages that can extend the areas where TightVNC can be helpful.

4.1.3 Introduction to Microsoft Visual Studio

Visual Studio is a complete set of development tools for building ASP.NET Web applications, XML Web Services, desktop applications, and mobile applications. Visual Basic, Visual C, and Visual C++ all use the same integrated development environment (IDE), which enables tool sharing and eases the creation of mixed-language solutions. In addition, these languages use the functionality of the .NET Framework, which provides access to key technologies that simplify the development of ASP Web applications and XML Web Services.

Chapter 5

Implementation

The implementation phase of the software design consists of different tasks to be done sequentially for obtaining the desired results. There are two modules: user module and background module. The different phases are:

- **Creating Graphical User Interface:** GUI is created in eclipse under Android SDK 4.0 for a user friendly interface. It is intended for two purposes. First is to create a user friendly interface for the software. Having a good user interface makes it easier for the user to use and understand the different functionalities of the software. Secondly the user interface hides the end users from the complexities in the working of the software.
- **Creating System Environment:** For the intended project to work on, it need to implement hardware and software requirements. This system is build using visual studio 2010 under .NET framework and Android platform using eclipse based on Windows operating system.

5.1 Screen shots

In this chapter, the screen shots of the results achieved in different stages had been displayed. The screen shots of launcher and terms and conditions are shown below. Here launcher (fig 5.1), the progress bar used to shows

the loading of application. Terms and conditions(fig 5.2), shows academic project development license and a new user must accept this license.

Other screen shots such as user registration, user login, connection window, system configuration, home options, remote desktop access, send notification, power options and message notification has shown in appendix.

User registration window shows mobile user can register by providing his/her username and password. User Login, registered users can login with username and password. Connection window contain two options: connect to PC and Create Network. When create network option selected control goes to the settings of android. System configuration connect the PC to android through IP address. Home option have four selection options: desktop mode, send notification, power options and disconnect. The remote desktop shows the desktop of PC in android touch screen. Send notification used to send message to the remote child PC. Power option contains, shutdown, hibernate, restart, lock, logoff and sleep. Message notification shows the message from android.

5.1.1 User Interfaces

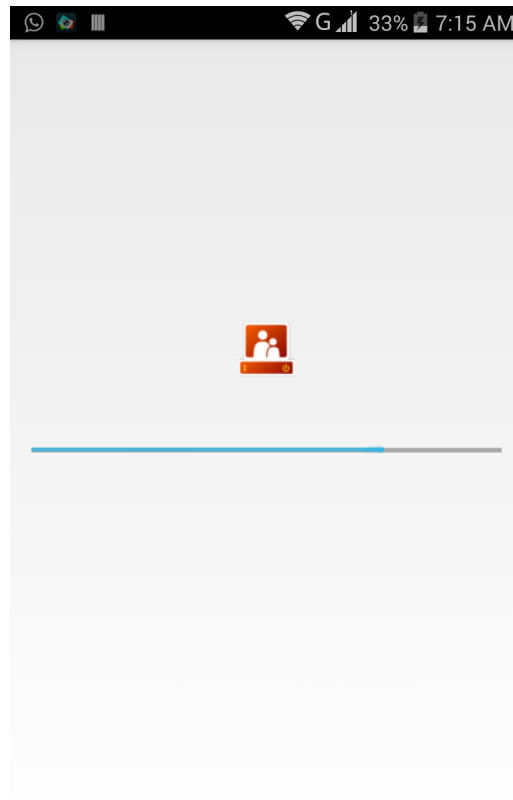


Figure 5.1: Launcher

This window shows loading of application.

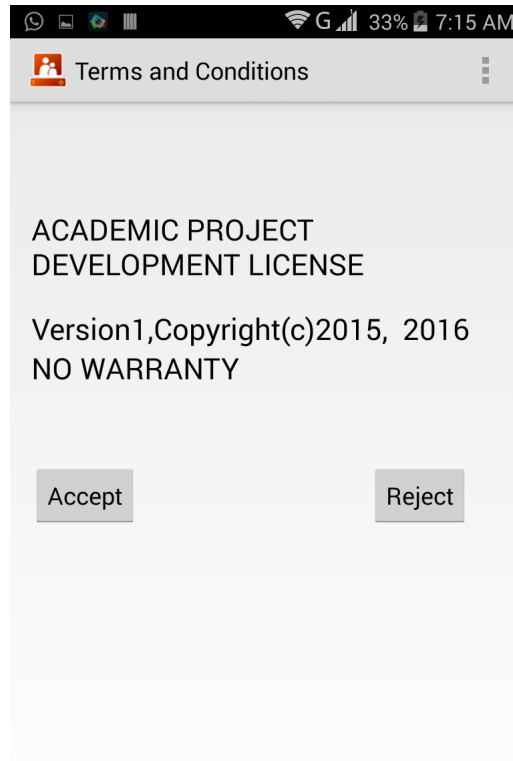


Figure 5.2: Terms and Conditions

This window shows academic project development license.

Chapter 6

Conclusion and Future work

6.1 Conclusion

PC Control is a client/server software package allowing remote network access to PCs graphical desktop. This software enables you to get a view of the remote machine desktop and thus control it with your android touch pointer. It can be used to perform remote system control and administration tasks in Windows computational environments with assorted network capabilities.

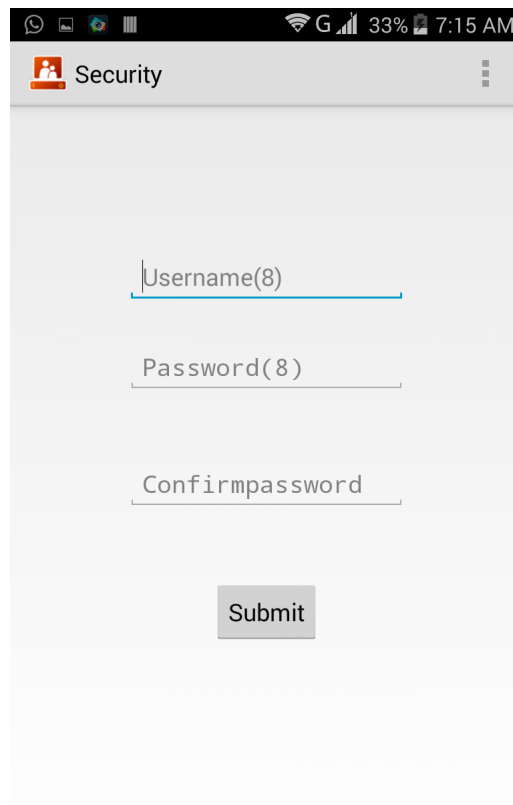
Currently parental control tasks in computational environments, using security system such as IPCam and false alarm etc. The environments are fully networked for various purposes and everyone have smartphones. Developed an application software which depends upon existing network and android smartphones.

6.2 Future Work

In future modify the application software to multi-user control. And also user requires training for each module. Then he/she should get an idea of database concepts, maintaining security, report generation, navigation of each link and information flow. Then the system is easy to navigate for users. Plan to attach documentation and Help links with the app that helps to clarify doubts and provide overall view of the system.

Appendix A

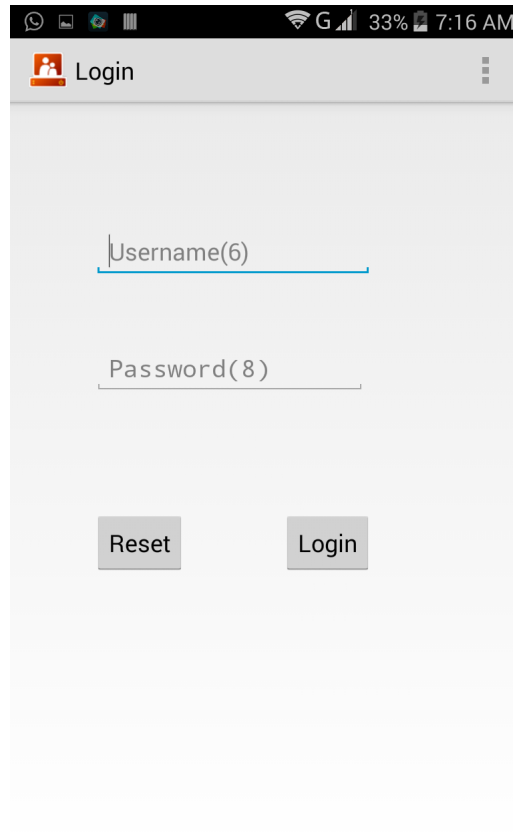
Screen shots



The screenshot shows a mobile application interface for user registration. At the top, there is a status bar with icons for WhatsApp, a gallery, a browser, and a menu, along with network status (G), signal strength, 33% battery, and the time 7:15 AM. Below the status bar is a header bar with a red icon of two people and the text "Security". The main content area is light gray and contains three text input fields: "Username(8)", "Password(8)", and "Confirmpassword". Each field has a blue underline. Below the input fields is a gray "Submit" button.

Figure A.1: User Registration

The mobile user can register by providing his/her username and password.



A screenshot of a mobile application's login screen. The screen has a light gray background. At the top, there is a black status bar with icons for clock, camera, browser, and app drawer on the left, and Wi-Fi, cellular signal, 33% battery, and 7:16 AM on the right. Below the status bar is a header bar with a red icon of two people and the text "Login" on the left, and a three-dot menu icon on the right. The main area contains two text input fields: the first is labeled "Username(6)" and the second is labeled "Password(8)". Below these fields are two buttons: "Reset" and "Login".

Figure A.2: User Login

The registered user can only login with username and password.

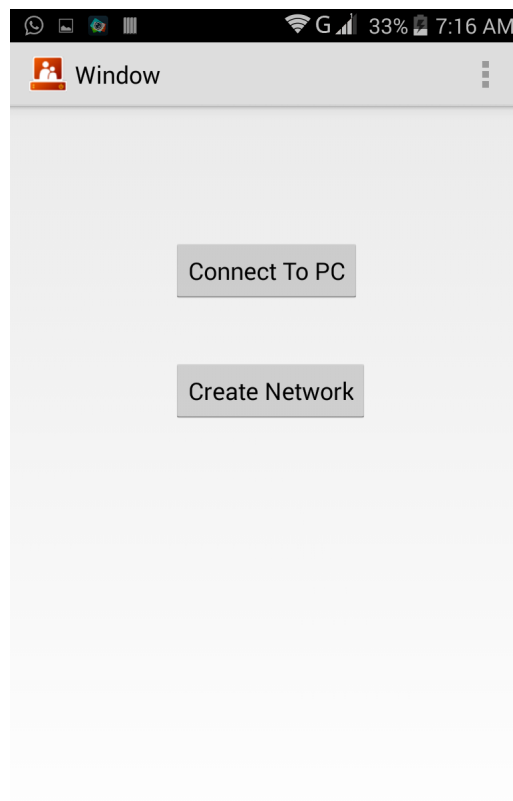


Figure A.3: Connection Window

This window contains two options: 'Connect to PC' and 'Create Network'. When the 'Create Network' option is selected, control goes to the settings of android; otherwise, if 'Connect to PC' is selected, control goes to the System Configuration.

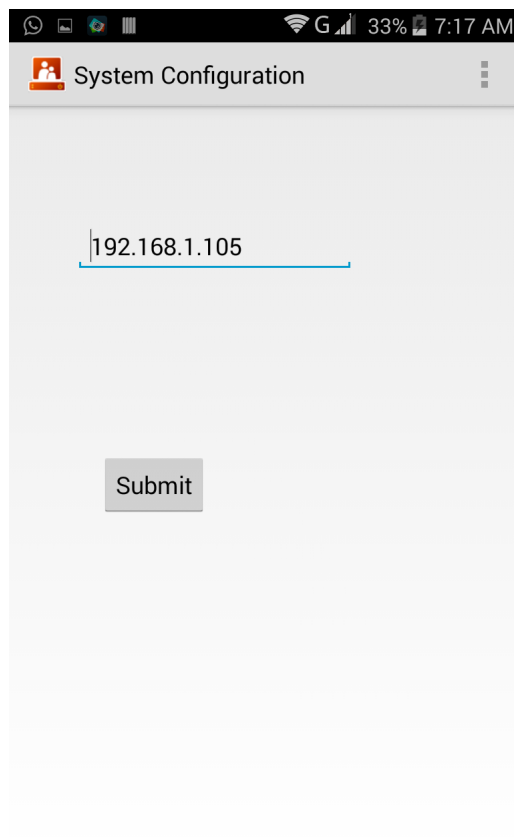


Figure A.4: System Configuration

This window connect the PC to android through IP address.

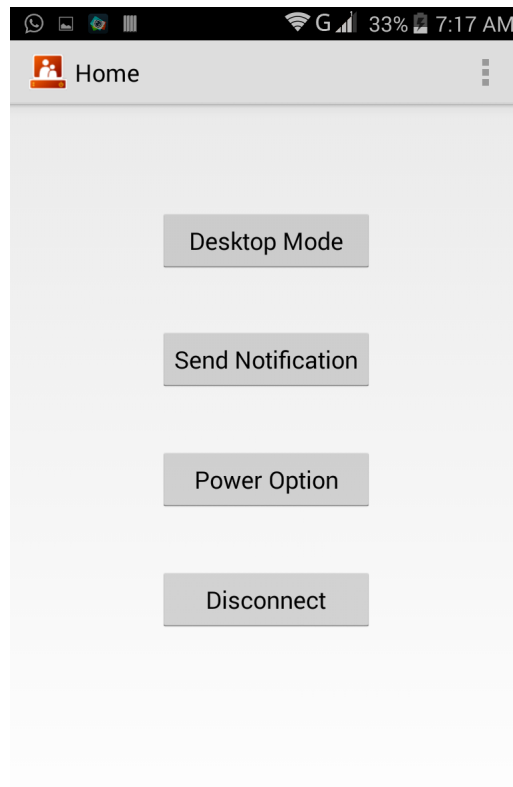


Figure A.5: Home Options

This window contain four selection options: Desktop Mode, Send Notification, Power Options and Disconnect.

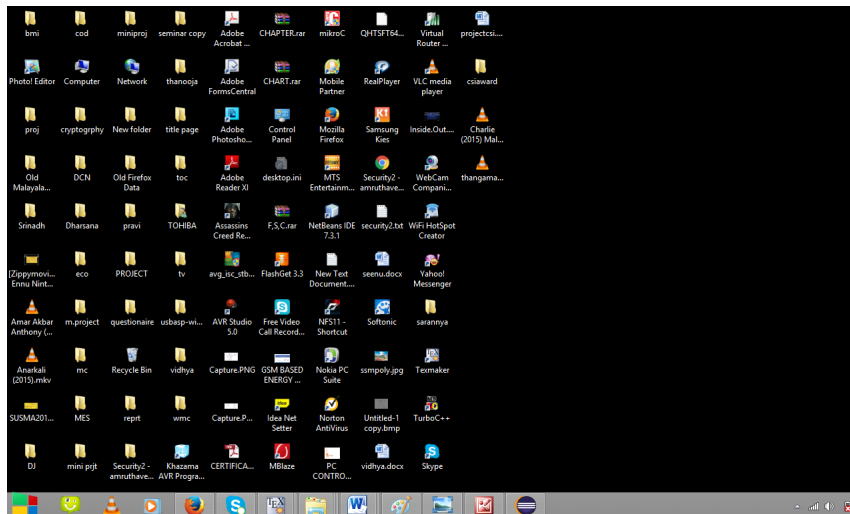


Figure A.6: Remote Desktop Access

This image shows the remote desktop access of child PC in an android touch screen.

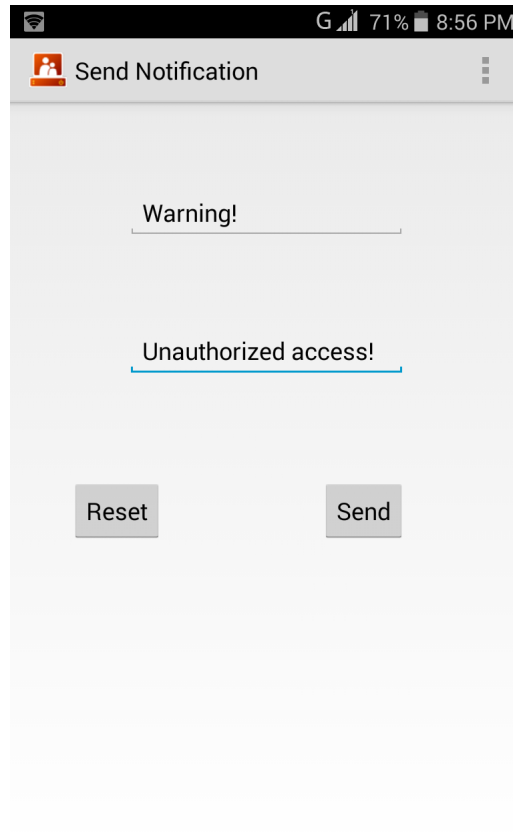


Figure A.7: Send Notification

This window used for send message to remote child PC.

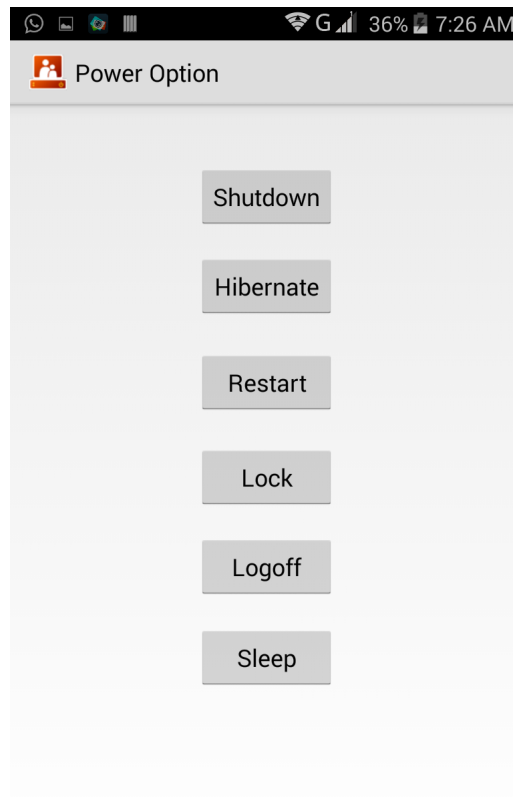


Figure A.8: Power Options

This window used to select shortcuts for power options such as Shutdown, Hibernate, Sleep, Restart, Lock, Logoff etc.

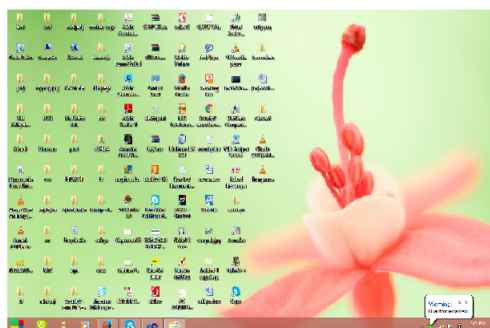


Figure A.9: Message Notification

This PC desktop image shows the message notification from android.

Bibliography

- [1] Tristan Richardson, Quentin Stafford-Fraser, Kenneth R. Wood and Andy Hopper, IEEE Internet Computing, vol. 2, no. 1, pp. 83-38, 1998
- [2] VNC tight encoder-data compression for VNC
K. V. Kaplinsky, Modern Techniques and Technology, 2001. MTT 2001. Proceedings of the 7th International Scientific and Practical Conference of Students, Post-graduates and Young Scientists Year: 2001 Pages:155 - 157, DOI: 10.1109/MTT.2001.983781Cited by: Papers (10) — Patents (5)IEEE Conference Publications
- [3] <http://www.iis.net/learn/install/installing-iis>
- [4] <http://tightvnc.com>
- [5] <https://code.msdn.microsoft.com>
- [6] <http://www.vogella.com/tutorials/Eclipse/article.html>
- [7] <http://www.vbtutor.net/index.com>