

# Pocket PC: A Remote PC Access through Voice Using Smart Phone

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**Abstract:** This paper presents *POCKET PC: A Remote PC access through voice using smart phone for physically disable peoples and also for normal peoples. These peoples were not able to work with computer system feasibly. The reason behind implementation of this system is to provide way that the physically disabled people and also normal peoples can easily work with the computer system by using voice command and manual commands. This system requires smart phone, PC server and speech recognition module (SAPI) that are connected in the network to each other's. Application user can propagate voice commands as well as manual commands to control the remote desktop, handle keyboard control mouse and also to transfer file from device to desktop and vice versa (FTP), And also to send email using voice (SMTP), media control and type on fly operations. The commands propagated to the server by the application user will immediately get executed.*

**Keywords :-** Speech recognition, PC server, smart phone.

## 1. INTRODUCTION

A Remote desktop control through voice using smart phone for physically disabled peoples and also even for normal peoples. This system consist of devices such as smart phone, desktop server with speech recognition (SAPI) connected to each other. Physically disabled people can pass a command through voice for controlling the desktop system, media control such as previous next, stop, internet surfing such as default browser, type in notepad, basic PC surfing. User can also perform manual operations such as view desktop, view file, control keyboard, control mouse, open file, close file, shutdown the desktop system and file transfer (FTP) and also even sending mail. Also user can use shortcut keys which are created for operations such as copy, paste, delete. Controlling Desktop system through voice using smart phone. Existing system has drawbacks such as: no file transfer (FTP) operation, no SMTP operation, no type on fly operation, only manually controlling desktop, no voice commands

were executed or controlled through existing system. Our proposed system is performing the operations such as: file transfer (FTP), sending mail (SMTP), type on fly operation, and also control the desktop through voice and even manually.

## 2. RELATED WORKS AND TECHNOLOGIES

Related works and technologies of the proposed remote computer control system using speech recognition technologies of mobile devices are Android, and speech recognition.

Android is a Linux-based open mobile platform for mobile devices such as smartphones and tablet computers. It is composed of not only an operating system, but also middleware, user interface (UI), browser, and application. It also includes C/C++ libraries that are used in components of various Android systems.

There are enormous projects and initiatives designed that allow remote control between devices even there are some initiatives that aim to control mobile devices but most of them lack in use of open source platform so we present an initiative in open source that covers this particular area of interest. The proposed platform is flexible and scalable.

Android platform allow the development of new idea easily and test them with set of open standard. There are different types of possibilities establishing connectivity between target PC and Mobile phone such as USB interface, Java socket and Android debug bridge client each of them have own consequences.

Google uses artificial intelligence algorithms to recognize spoken sentences, stores voice data anonymously for analysis purposes, and cross matches spoken data with written queries on the server.

Key problems of computational power, data availability and managing large amounts of information are handled with ease using android.

speech. RecognizerIntent package Client application starts up and prompts user to input using Google Speech Recognition.

Input data is sent to the server for processing and text is returned to client. Input text is passed to the natural language processing (NLP) server for processing using HTTP (Hypertext Transfer Protocol). Then the server performs NLP.

A Remote computer control system using speech recognition technologies of mobile devices was implemented by Java programming language.

❖ Drawbacks of existing system:-

- No type on fly operation.
- No FTP operation.
- No security provided.
- No Slide Changing (PPT).
- No Remote E-mail Client.

**3. PROPOSED SYSTEM.**

- In our proposed system we connected desktop and android phone through Wi-Fi network.
- There were general phones for controlling desktop but we used android phone.
- We have provided security for our system by using OTP.
- Servlets have been used as middleware for request and response.

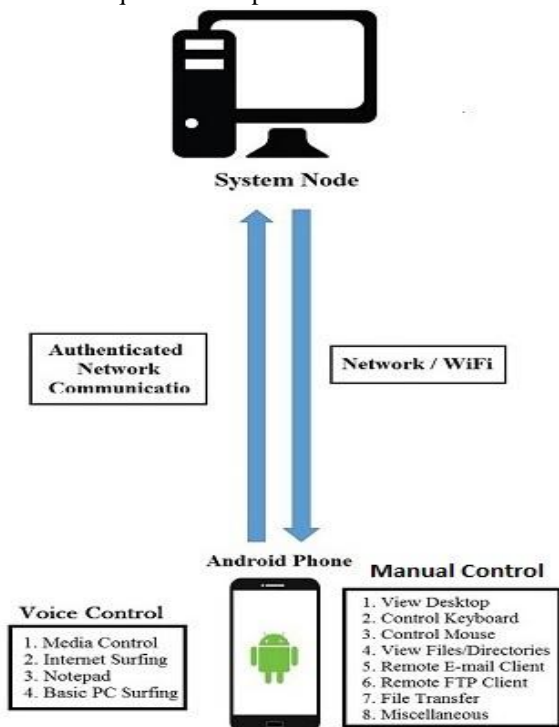


Fig: Architecture of Pocket PC.

**4. FLOW OF PROJECT.**

- 1) Authentication using OTP.
- 2) Desktop will get view on the android application.
- 3) Android application will view the servers desktop.
- 4) Android application will propagate commands to server.
- 5) Server will propagate commands on PC.

User will authenticate using one time password for login purpose. After login to the android application the desktop of server will get view on android application.

Further the user will propagate voice and manual commands through android application to server and server will propagate such command on PC.

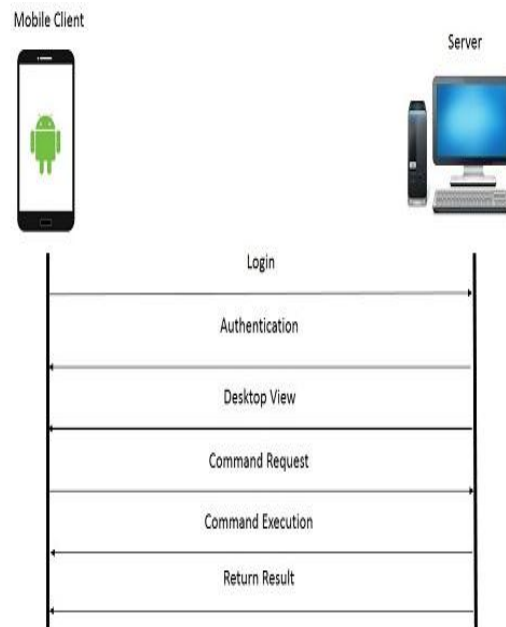


Figure 2: Flow Diagram.

**5. MATHEMATICAL MODEL**

A. Set theory :

Let us consider (S) is the set,

$$S = \{U, F, S, R\}$$

Where ,

U is a set of user accessing application,

$$U = \{U_1, U_2, U_3, \dots, U_n\}$$

F is a set of functions/operations performed by application,

$F = \{F_1, F_2, F_3, \dots, F_b\}$

R be the set of Remote machines/computers,

$R = \{R_1, R_2, R_3, \dots, R_m\}$

S is set of server,

$S = \{S_1, S_2\}$

B. Morphism :-

Access to Application LoginUser

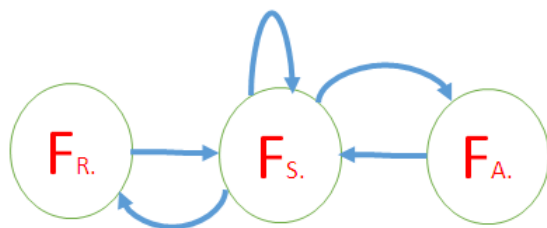
(User ID, Password);

Connect to Remote Desktop Select Remote Device (IP address)

Command to Process Perform Voice Command (Voice I/P) Connection Establishment Connect to Server (User PC to Server)

Remote Desktop on Android Access Desktop (Command)

**Task Flow Dependency:**

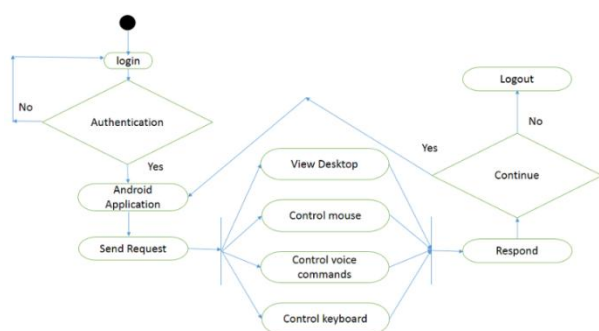


Here, FR.D. = Task performed by Remote Desktop Client.

FS. = Task performed by Server.

FA. = Task performed by Android Device.

**6. FLOW CHART**



**7. ADVANTAGES OF THE SYSTEM.**

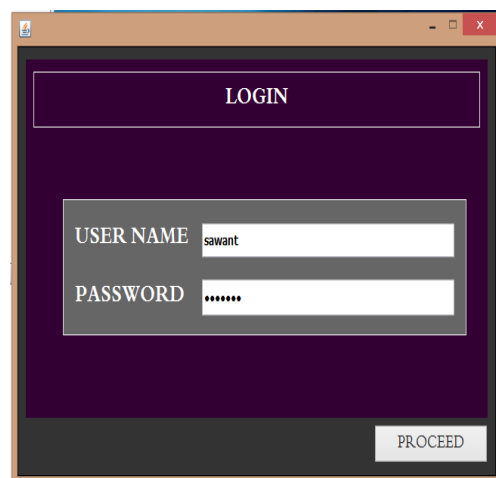
- Voice Control.
- Physically disabled People can also access the computer.
- Any time desktop access is possible (Wi-Fi Area).
- Remote Downloading FILES.

**8. APPLICATION OF THE SYSTEM.**

- Media Control.
- Type on Fly.
- Internet Surfing.
- FTP.
- Slide Changing (PPT).
- Remote E-mail Client.
- File Transfer.
- Control Keyboard & Mouse.

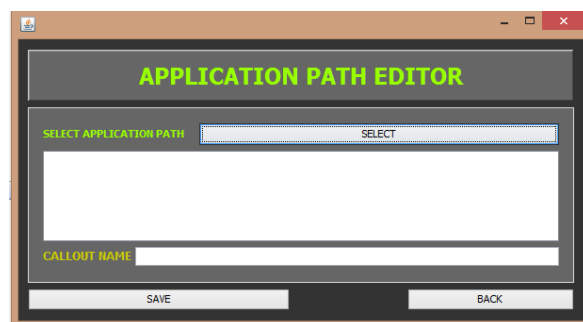
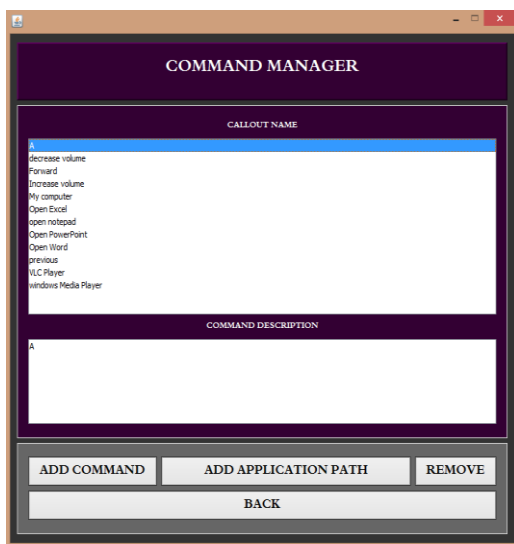
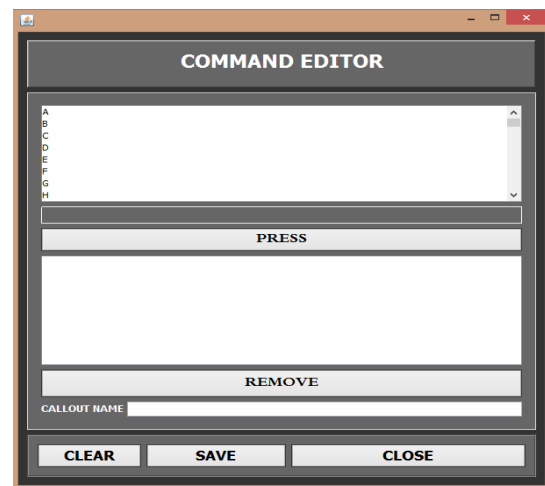
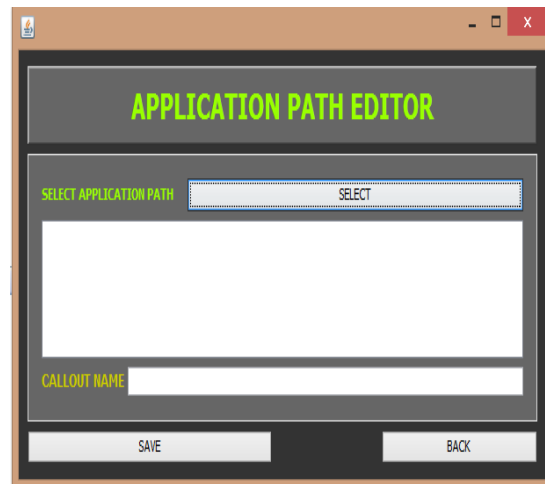
**9. IMPLIMENTATION AND RESULT**

. The roles of each number are in the following: A user commands using the speech recognition application of the mobile device. Execute STT (speech to text) through the server. Transmit results obtained from STT to the mobile device. Transmit results obtained from STT to the personal computer server via wireless communications such as WIFI, The personal computer server analyzes corresponding commands, and executes to distinguish between information which is sent to the server, and information which is executed on the personal computer server. Transmit information to the server if there is information to use the server among commands. The server returns corresponding values after analyzing corresponding services. Give the user information received from the server with voice messages or execute.



```

Public class FrmLogin extends javax.swing.JFrame {
login lo;
public FrmLogin()
JFrame.setDefaultLookAndFeelDecorated(true);
JDialog.setDefaultLookAndFeelDecorated(true);
try {
UIManager.setLookAndFeel("com.sun.java.swing.pla
f.windows.WindowsLookAndFeel");
}
catch (Exception ex) {
System.out.println("Failed loading L&F: ");
System.out.println(ex);
System.out.println("Loading default Look & Feel
Manager!");
}
 initComponents();
Dimension sd = Toolkit.getDefaultToolkit().getScreenSize();
setLocation(sd.width / 2 - this.getWidth() / 2,
sd.height / 2 - this.getHeight() / 2);
lo = new login();
}
    
```



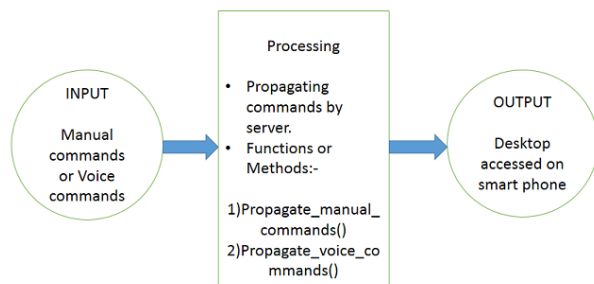
## 10. INPUT OUTPUT BLOCK DIAGRAM

### INPUT

- Voice command
- Manual command

### OUTPUT

- Desktop on mobile
- Desktop Control



## 11. EXPERIMENTAL SETUP

For implementing proposed system we are using java programming language.

System environment:

1. Operating System:- windows Xp, windows 7, windows 8, windows 8.1, windows 10.
2. Coding language:- Java.
3. Database:-Java Serialization

Hardware requirement:

- 1) System:-Dual core,i3/i5/i7 Processor
- 2) Hard Disk:-16Gb and above
- 3) Memory(RAM):-1 GB and 2 GB RAM.

Software requirement:

- 1) Net beans 7.1
- 2) Jdk. Android

Front end: Net beans, SDK, Eclipse.

Back end:-Java Serialization, Apache Tomcat

## 12. CONCLUSION

From our proposed system we concluded that desktop can be control through voice using smart phones/android phones and even connecting desktop and phone through Wi-Fi network and this system is going to be useful for social people such as physical disable and normal people. In future we will implement our system by connecting desktop and phone through internet and we will try to implement this system for android watch.

## 13.ACKNOWLEDGMENT

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