

System Control Using Mobile

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About Project

This project will perform basic PC controlling operations (mouse, keyboard control mode and utilities) using Bluetooth radio signal, sent from a mobile connected to that PC. In utilities we can run application by typing application name in mobile just like notepad and calc. In utilities we can send message from mobile to pc. The programming language used for this project is JAVA. This application was developed in two parts, one is the server running on PC which is to be controlled and the other part was to be installed in the mobile which will be used to control the PC. Java being a platform independent language was the best choice, so that this project can be run on different mobiles and PC with various operating systems. The client application is programmed using J2ME and the server program is programmed using J2SE.

Overview of the Project

- 1) Application developed in two parts
 - The server running on PC, Programmed using J2SE.
- 2) Objective was to a develop a software that will perform basic PC controlling operations (mouse and keyboard control and have one utility that contains run command and sending message) using Bluetooth radio signal, sent from a mobile connected to that PC.
 - Client to be installed on mobile phone, programmed using J2ME.
- 3) The programming language used for this project is JAVA. Java being a platform independent language was the best choice.

The Bluetooth Technology

Bluetooth is a wireless communication protocol mainly used for short distance and in devices with low power consumption.

Capable of communicating in an Omni - directional manner of up to 30 feet at 1 Mb/s.

The system offers services that enable the connection of devices and the exchange of a variety of classes of data between these devices.

It is a wireless communication protocol that, like HTTP or FTP, operates in a client/server architecture.

It uses the 2.4 GHz band.

Mobile Application (Client Part)

- Client program contains all the basic components of a Bluetooth application
- It can discover any Bluetooth device around the host mobile phone or can view the Bluetooth devices already connected.
- Basic parts of the client application

- Device discovery.
- Establishing connection.
- Sending commands to control the PC.
- Showing the image under the current cursor position on PC, while in mouse mode.
- Operates in two modes and have one utilities
- Mouse mode
- Keyboard mode
- Utilities
- Run command
- Send message

Mouse Mode

- Press keys 2, 4, 6, 8 to move the cursor up, down, left and right.
- Press keys 1 for left click and 3 for right click.
- Press keys * for scrolling up and # for scrolling down.

Keyboard Mode

- In keyboard mode we can type using qwerty keypad of mobile.
- Keyboard mode is mobile specific as different mobiles have different codes for each key.

UTILITIES

a) Utilities contains run command and send messages

- In run command we have to type the name of the application and then click ok.
- The application will open in PC
- For example

If we send command notepad then notepad will open in PC

If we send calc then calculator will open in PC

- In send message we have to type message in mobile and then we have to click ok.
- Then message will appear on the PC screen.

1) PC Application (Server part)

The receiver program is used in the computer which receives command from the client's mobile through Bluetooth and takes necessary steps to perform different actions.

- When the receiver program is run it always waits for a connection from any bluetooth remote device within it's range.
- Basic parts of the server application
 - Creating the Graphical User Interface (GUI).
 - Connecting to the client.
 - Receiving data sent from the client.
 - Comparing string and generating commands.
 - Sending the image under current cursor position to client.
 - Showing the current status of the receiver.

Hardware Requirement:

- MIDP Enabled Mobile Phone
- RAM - 512 MB
- PC with Bluetooth connectivity

Software Requirement:

- J2ME Emulator
- NetBeans IDE JAVA Development Kit
- JDK 1.6

Conclusion

This software is very much user - friendly. To use it one needs just to press button to control pc operation. User don't have to know the Bluetooth address of the server PC. It can discover any Bluetooth device and there services around it.

This software is applicable for all versions of WINDOWS operating system. As maximum computer users feel comfort to use this operating system. I am looking forward to improve this software to make it truly platform independent and to implement the software over wi - fi link.

Future Advancements

- Extending it to transfer commands over wi - fi to increase speed.
- Extending it to transfer commands over internet.

Resources

Software resources

- [1] Jdk 6 (1.6.0_26)
- [2] Net Beans IDE 7
- [3] sun_java_wireless_toolkit - 2_5_2 for windows

Books Referred:

- [4] Java how to program 6th edition - Deitel & Deitel
- [5] The Complete Reference J2ME - Herbert Schildt
- [6] Bluetooth For Java - Bruce Hopkins