A CHAT APPLICATION USING BLUETOOTH TECHNOLOGY

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Abstract- The project discussed here is an Android messenger application which connects using Bluetooth. The main concepts discussed here are: Bluetooth connection between two or more android smart phones, whereby users can chat with each other. State machines and finite expressions used to achieve robustness, thereby delivering error free messages. This app doesn't require an internet connection rather uses the in-built Bluetooth facility in a phone. Bluetooth provides the communication on low-cost, low-power basis. Wireless communication can also be done with the help of Bluetooth technology in a mobile communication. Short-range establishment of two-way communication has occurred without any support of the network. Bluetooth is integrated into Android which is a mainstream Smartphone platform as a mean of mobile communication. Nowadays Android becomes the latest technology in the Smartphone's which provides the open sourcing and powerful application API.

KEYWORDS: Component; Android; Bluetooth; Wireless Communication; chat

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1.INTRODUCTION

Bluetooth chatting is an innovative approach to the mobile world. This application shows use of Bluetooth in terms of chatting. Means persons can chat via Bluetooth. The main screen has just a list which has two values server and client. By selecting one of these two values, the corresponding instance is created. Main screen is used to initialize the connection. It does follow thing at here. First, it starts the application and search the Bluetooth device. It sends the signal to the server class. Second, it can run, pause and stop the application. Third, it shows alert using set Alert function on every changing. Server class goes active when it go signal from the main class. It sends the hello world string with the string to the other devices. Client class works to respond the other Bluetooth device server. Bluetooth is named after a Danish king, Harald Bluetooth, who ruled from 940 to 985 AD. During his reign, Bluetooth was able to unite Denmark and part of Norway into a single kingdom. In 1994 according to Ericsson started researching short-range wireless technology. That could be used between their cellular phones and peripheral devices, such as a headset. In 1998 according to Ericsson, Nokia, IBM, Toshiba, and Intel came together to form a Special Interest Group (SIG). These companies were chosen because of Ericsson and Nokia's leadership in mobile telephones, IBM and Toshiba's leadership in laptop computing, and Intel's leadership in digital signal processing technology. In four short years, the original five companies, in the SIG, have turned into 1500. Bluetooth's original mission was to replace all of the cables that tie up today's complex world. There are many cables plugged into the back of a computer for instance, a monitor, a keyboard, a mouse, and a printer. The location of the correct plug can become very confusing for the user, as more ''plugged-in'' devices are introduced; this is where Bluetooth comes in. The developers of Bluetooth soon realized that this technology is capable of much more than just connecting peripheral devices. It can work as a lower speed wireless network, allowing connection through access points at any location.

2. LITERATURE SURVEY

2.1 Theoretical Framework

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Bluetooth is a low cost, low power, short-range radio technologies intended to replace the cable connections between hand phones, PDAs and other portable devices. It can clean up your desk considerably, making wires between your workstation, mouse, laptop computer and many other devices. Ericsson Mobile Communication started developing their Bluetooth system in 1994, looking for a replacement to the cables connecting their hand phones and their accessories. The Bluetooth system is named after a tenth-century Danish Viking King, Harald Blatand, who united and controlled Norway and Denmark. The first Bluetooth devices hit market around 1999.

2.2 Bluetooth Architecture

The Bluetooth specification aims to allow Bluetooth devices from different manufactures to work with each other, so it is not sufficient to specify just a radio system. Because of this, the Bluetooth specification does not only outline a radio system but a complete protocol stack to ensure that Bluetooth devices can discover, explore and use these services with each other.

3. EXISTING SYSTEM:

This application allows two Android devices to carry out two-way text chat over Bluetooth. It demonstrates all the fundamental Bluetooth API capabilities, such as:

(1) Scanning for other Bluetooth devices.

(2) Querying the local Bluetooth adapter for paired Bluetooth devices.

(3) Establishing RFCOMM channels/sockets.

(4) Connecting to a remote device.

(5) Transferring data over Bluetooth.

DISADVANTAGES OF EXISTING SYSTEM:

- It can lose connection in certain conditions.

- It has low bandwidth as compared to Wi-Fi.

- It allows only short-range communication between devices.

- Security is a very key aspect as it +can be hacked.

4. PROPOSED SYSTEM:

This project research work focus on development of real-time chatting android application for data exchange (Text) in a real-time process. The real-time chatting

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application will Scan for other Bluetooth devices, Query the local Bluetooth adapter for paired Bluetooth devices, Establish RFCOMM channels, connect to other devices through service discovery, data exchange through socket from other devices and lastly manage multiple connections. The real-time socket chatting processes can take place under a peer-to-peer topology using Bluetooth communication channels.

ADVANTAGES OF PROPOSED SYSTEM:

It avoids interference from other wireless devices.

- It has lower <u>power</u> consumption.
- It is easily upgradeable.
- It has range better than Infrared communication.
- The Bluetooth is used for voice and data transfer.
- Bluetooth devices are available at very cheap cost.
- No line of sight hence can connect through any obstacles.
- Free to use if the device is installed with Bluetooth.

- The technology is adopted in many products such as headset, in car system, printer, web cam, GPS system, keyboard and mouse.

5. MODULES:
Input forms Design

Input forms fields are what allow your users to fill in your form. Depending on what information you ask, there are various types of field's text fields, password fields, dropdowns, check boxes, radio buttons, date pickers and others. All these are design using paper and pencil i.e., having a paper prototyping and the actual system. In this section the Variable names, Datatype and the Variable length required for each input field displayed. Methods for preparing input validations and steps to follow when error occur.

Process Design

This section describes the different stages involved on during the creation of the online market survey and reporting system. The activity determines the workflow, equipment needs, and implementation requirements for a particular process.

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Process design typically uses a number of tools including flowcharting, process simulation software, and scale models.

6. RESULTS:
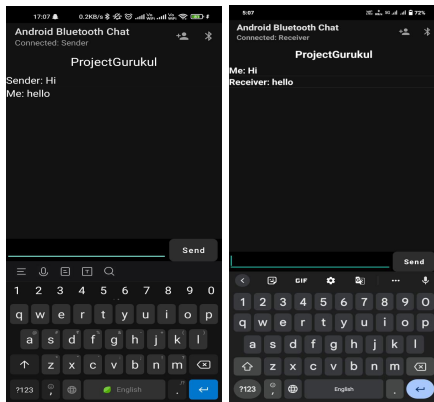
7. CONCLUSION

The system was design and implemented using the android framework Integrated Development Environment with some other development language like Java for Backend, XML for frontend and some static files. These applications after compilation are tested using a mobile phone or emulator running with Android operating system. This application consists of four major modules: The Scanning, Identification, pairing and Data Exchange modules. The scanning module performs a scan and

locates other devices within the range of connectivity and the scanning device identifies other device and prepare for pairing with a unique identifiers like numeric key or asymmetric data connection process then the data exchange processes is initialized. The technology for data communication process is the Bluetooth Technology having advantage over some other medium like internet and Wi-Fi hotspot like cost and low powered communication medium.

8. REFERENCES

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