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BLUETOOTH CHATTING APPLICATION

Vishwas S, Sughosh N Murthy, Vishnu B, Manoj N

MVJ COLLEGE OF ENGINEERING, BANGALORE, KARNATAKA

ABSTRACT

In the past communication used to happen through the means of wired sources. Bluetooth is a modern technology, and it is the entry to the world of wireless communication. This is a technology that is applicable to all the devices that have latest technology like Bluetooth enabled in them. All today's modern devices come with these features as inbuilt. As most of the companies are adopting this new technology it seems that the world is moving towards more technological advancement.

Once the Bluetooth connection is successful the communication between the two parties happens automatically. Usually for a messenger application to run flawlessly there is need of internet either in the form of mobile data or Wi-Fi or ethernet. In the Bluetooth chatting application as the name suggests there would be no need for the internet but instead communication and take place with the help of Bluetooth only. This would really come in handy when there is no network connection, and some message must be sent.

Apart from all this even the messages that are sent are stored until the connection is present between the two parties.

KEYWORDS

- Bluetooth
- Android
- Communication
- Connection

INTRODUCTION

The Bluetooth technology allows the exchange of data in a wireless medium.

Text conversation, which includes emails and the usage of messaging apps, has recently gained popularity.

Textual media are simpler to use and accurately convey meaning.

compare with other media when posting. Even though copying is simple and the volume of information is relatively little, it nonetheless plays a significant part in modern electronic communication. Messenger apps are a very recent and well-liked tool that many people use on a regular basis. With an SMS-inspired design, we may communicate immediately. All applications have the same fundamental setup thanks to the IRC technology, which serves as their common base. But when the appropriations issue emerged because it is required to utilize the system differently depending on the usage: the individual chat or the group chat. As the variety of contacts has risen and the frequency of

interaction has grown, a certain difficulty has emerged. The risk of providing information to the incorrect person via contacts is likewise very significant. No discussion has been had regarding how to make it simpler to switch between group and individual chats or how to make the systems more user-friendly in that regard.

Additionally, electronically communicates should be recorded nevertheless, as time goes on, they will get lost in the sea of other data. Older material is retained far up in the conversation history, but Slack organizes information by projects or themes. Newer Tweets or posts are displayed at the top of the feed on SNSs like Twitter and Facebook. However, each app is really a container in which users can keep data but cannot call data, which may be a feature of the web. The ease is enormous if we can obtain outdated information without searching.

Furthermore, if we can access the details of user chats that we had no chance to hear before, our ability to function as a team should be improved. To avoid sapping private content, it is recommended to just share necessary portions. Additionally, it is anticipated that if we can communicate effectively when we wish to convey a message solely to particular people during a group conversation, job productivity would be further increased.

It is creative that messengers can use word searches to share information in a non-traditional method. This can lead to new forms of communication by altering how the information call is expressed. Creating a system that can transform messaging apps from a design that has stayed the same for decades is vital.

PROCESS OF BLUETOOTH CHAT APPLICATION

- i. In the first step it verifies the current status of the devices Bluetooth connectivity.
- ii. If the devices Bluetooth is turned off, the program will prompt a request to enable it.
- iii. The program will initiate a scan for nearby devices in the range.
- iv. The program will generate a list of all the devices within range and display it on the screen.

- v. The user can then choose the device they wish to initiate a chat with from the list.
- vi. If the device connects then set up chat.

A. Design of Bluetooth Communication

User interface is divided into 4 parts:

- a) Connection Request: This is located on the client-side and enables the user to establish a chat session with the other device.
- b) Chat Interface: This interface is shared by both the client and server and is where the devices can exchange messages with each other.
- c) Session Termination: Any of the two devices can ask terminate the session.
- d) Syncing Messages: This interface allows users to store sent and received messages and syncing previous messages.

B. Bluetooth API: android. Bluetooth

The Android Bluetooth API includes a set of classes designed to facilitate. Bluetooth communication, including scanning for nearby devices, establishing connections, and handling data transfer between devices.

The Bluetooth APIs applications:

- i. Scan for other Bluetooth devices.
- ii. Query the local adapter to obtain a list of paired Bluetooth devices.
- iii. Establish RFCOMM [Radio Frequency Communication] channels/sockets.
- iv. Bluetooth API can establish connections to specific sockets on other devices.
- v. Transfer data to and from other devices.
- vi. Configuring and managing Bluetooth connections and settings.
- vii. Supporting a wide range of Bluetooth profiles and protocols.

ANDROID STORAGE AND BACKUP

Android's Backup service provides a seamless and secure way for developers to backup and restore their application data on a remote server, ensuring users don't lose their data in case of device loss, damage, or software updates.

With Android's Backup service, developers can easily create a restore point for their applications data on a cloud-based server, simplifying data recovery and providing users with an enhanced user experience. The Backup service in Android enables developers to backup important user data on a remote server, allowing seamless data recovery in the event of an application upgrade or device change, providing users with a reliable and convenient way to preserve their data. By utilizing Android's Backup service, developers can ensure that their application data is secure and recoverable, even in the event of unforeseen circumstances such as device loss, theft or upgrade.

C. Phases in Bluetooth

Communication

Five phases have been identified for Bluetooth chat application
They are:

- a. Initialization Phase
- b. Device Discovery Phase
- c. Connection Establishment Phase
- d. Data Transfer Phase
- e. Connection Termination Phase

a. Initialization Phase

- During in this first phase, the Bluetooth hardware is initialized, and the necessary resources are allocated.
- Setting up Bluetooth and finding devices.

b. Device Discovery Phase

- In this phase scans for Bluetooth devices in the area and collects information about them.

- This information includes the device's name, address, and supported services.

c. Connection Establishment Phase

- Once a device has been discovered, Bluetooth chat application establishes a connection with it.
- During this phase, the Bluetooth devices authenticate each other and establish a secure connection.

d. Data Transfer Phase

- In this phase, Bluetooth chat application enables the exchange of data between the connected devices.
- This can include sending and receiving files, streaming audio, or any other data transfer supported by the Bluetooth protocol.

e. Connection termination Phase:

- Finally, when the data transfer is complete, the connection is terminated.
- This phase involves freeing up any resources used by the connection and releasing the Bluetooth hardware.

Algorithm

Requesting Device(client)

1. Launch Bluetooth Messenger application.
2. Input the name of the user.
3. Turn on Bluetooth.
4. Scan for Devices.
5. Choose the device to connect to.
6. After the connection is successful, Input and exchange messages.
7. Messages exchanged get displayed and stored.

Requested Device(Server/host)

1. Launch Bluetooth Messenger application.
2. Input the name of the user.
3. Turn on Bluetooth.
4. Scan for Devices.

5. Choose the device to connect to.
6. After the connection is successful, Input and exchange messages.
7. Messages exchanged get displayed and stored.

Advantages

1. Low-cost and low-power wireless connection.
2. Internet or Wi-Fi connection not required.
3. Standard short range communication and wireless communication possible.
4. Easy to use technology.
5. Efficient and fast messaging.

Disadvantages

1. Totally new people can communicate with others using Bluetooth devices.
2. Range to chat or communicate is limited.
3. Speed is comparatively less to wired technologies.
4. Small amount of data can be transferred at one time.

Future Scope

1. Improving range of Bluetooth
2. Improving the speed of communication.

Result and Conclusion

Hence, after referring through the design and architecture of Bluetooth as well android we come to conclusion that the implementation of Bluetooth chat application can be done easily which is very useful for android users.