Khulna University of Engineering & Technology,Khulna

PROJECT REPORT ON

"Coconnect"

Submitted by:

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Objective:

1. To build and develop an android application by using socket programming.

2. Build and develop an ‘Android Based Bluetooth Chat Application’ named ‘Coconnect’ using SQLite database and JAVA programming language.

3. Using XML markup language and other online resources for user interface designing of the application.

4. To communicate with another person,sending and receiving text messages as well as all kinds of files and photos will be shared via bluetooth connection inside the range of bluetooth network through this application.

5. To use the communication ,via local area network(Bluetooth network) without any cost.

Introduction:

Android studio is one of the most renowned softwares for android app developers to build and develop an android application easily.Android studio provides us permissions to access the inbuilt functionalities of our android devices.Bluetooth service is one of them.By using Local Area Network(LAN) of bluetooth , it is possible to develop a bluetooth chat application for android .

For this application,firstly it must be took permission to use bluetooth service of android from manifest.xml file.Then the concept of socket programming is applied by JAVA programming language to develop this application.Besides,the functionalities of turning bluetooth on or off is included in this app before set the connection.

Besides,SQLite database is used here to store and modify the chat messages.SQLite is inbuilt database of our android device ,so we can easily

use this database by extending it to our javaclass.As the application is offline based and no need to use any kind of networks , this database is used to develop the application.For using the database ,it must be created firstly with a table name and the columns with column name under the table.In the application ,two columns are used ,one is id with auto increment and the other is message where all the chat messages are stored.

In the application,the database is used to show data in realtime programatically in the chat filed and also use this functionalities to delete the data.Overall,the one of the most advantages is the application is used without any cost which is used to communicate with other in the range of bluetooth network(LAN).

Implementation:

In the project,the android based bluetooth chat application named ''Coconnect'' is made totally based on socket programming.In ditails,at first i used splash screen for the beginning activity after launched the application.In this activity the animation and custom progress bar is used through libararies .After a few seconds,another activity is automatically opened and that is multiple page activity from where we can go to the next activity by clicking the cardview named bluetooth based chat.Next activity is the dashboard activity to handle the bluetooth connection.From this activity,we can turn on and turn off bluetooth service from the android device.Then by clicking the next button ,main activity is opened where the chatting facilities are included .But if we forget to turn on bluetooth and come to this activity from dashboard activity,then the alert dialogue is automatically shown here to turn on bluetooth.

Besides most of the basic implementations of the application are included in this main activity.To develop the application SQLite database is used. The

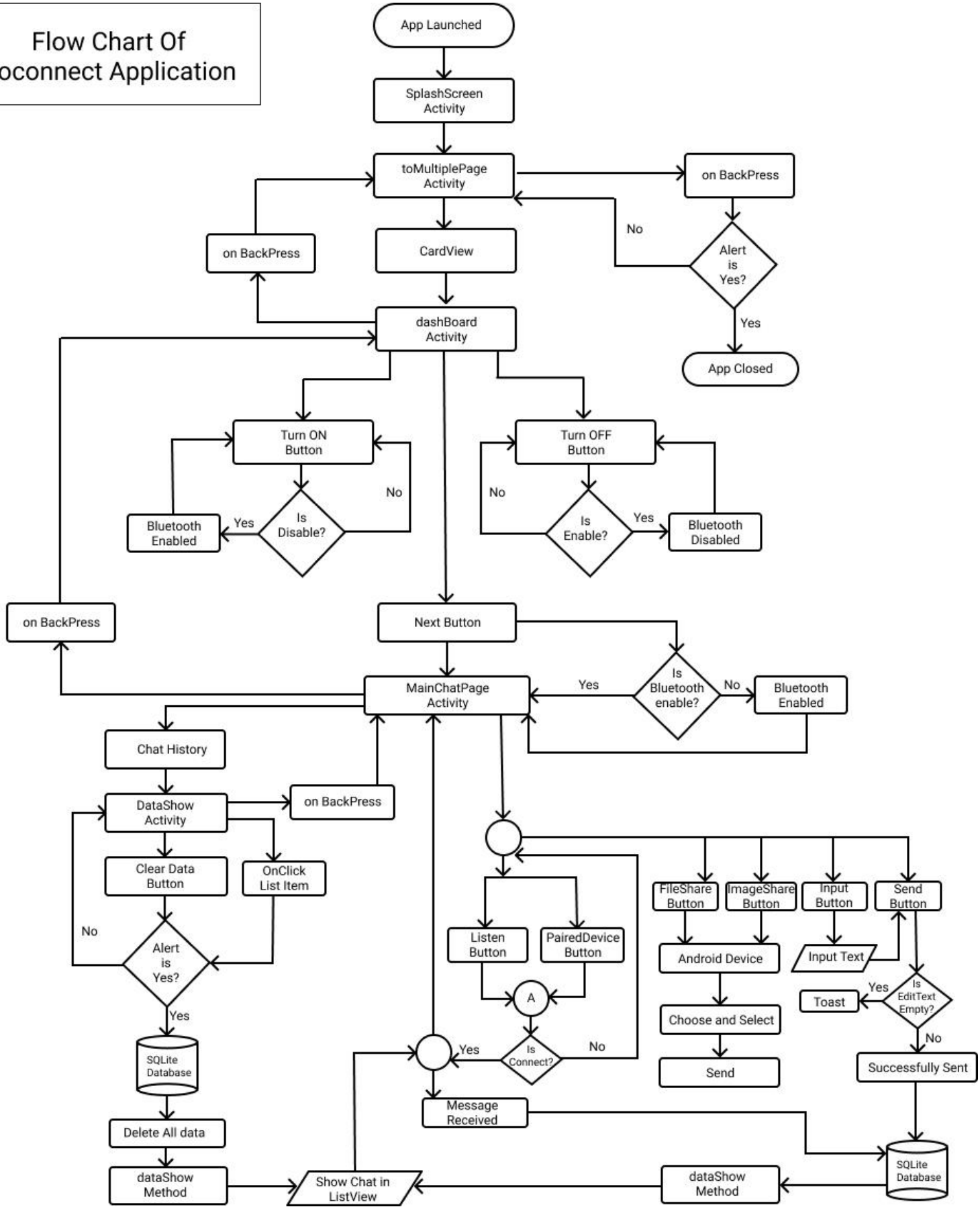
database and the corresponding table are made in the java class and after that the connection is built between the database and the application.To say in details,in the activity listen and paired button is used to connect the devices with each other.Here one device can listen and with this respect the other device have to be paired by clicking the device model item.If the connection between two devices are successfully build,we can send receive the text messages.In this activity ,a sub layout is made to show the messages in listview with the realtime advantages.

Moreover,edittext is used to take input text from this activity and after taking input text,the message will be sent to other device by cliciking the send button.Here some functionalities are added.If the input text field is empty or the connection is not established,after clicking the send button the toast messages will be shown.In this activity,the file and photo share facilities are included via device's bluetooth system.

Besides,the facilities of deleting the single message as well as the whole messages from database are also included in the application.Here,the data will be deleted by selecting 'yes' after showing alert dialog from list view in the activity.This deletion can be occured by clicking on item of the list view for single message deletion and clear all button for erasing all data from the database and at the same time fetching those data are retrieved and showed by listview in the activity by calling dataShow method in the java class.At last by back pressing of the android device ,it will be returned to multiple page activity from where the application will be closed.So, by doing all of the procedures and implementations the application might be successfully run without any issues.

Flow chart:

Flow Chart Of Coconnect Application

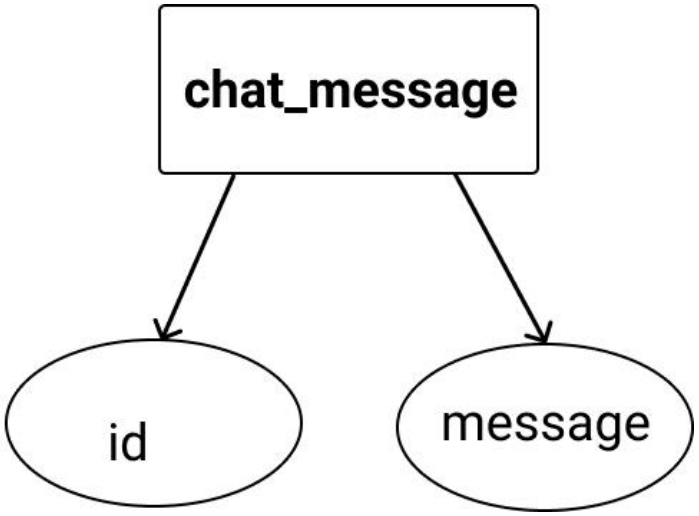


Schema Diagram:

The design of the database is called schema and more formally it means the structural view of the database.A database schema defines how the data is organized using the schema diagram.A schema diagram only shows us the

database design.It does not show the actual data of the database.Schema can be a single table or it can have more than one table which is related.The schema represents the relationship beetween these tables.

In the project the single database is used for storing messages with id.Here the table name is ‘’chat_message’’ and under this table two columns are used ‘’id and message’’.So the schema diagram is given below:

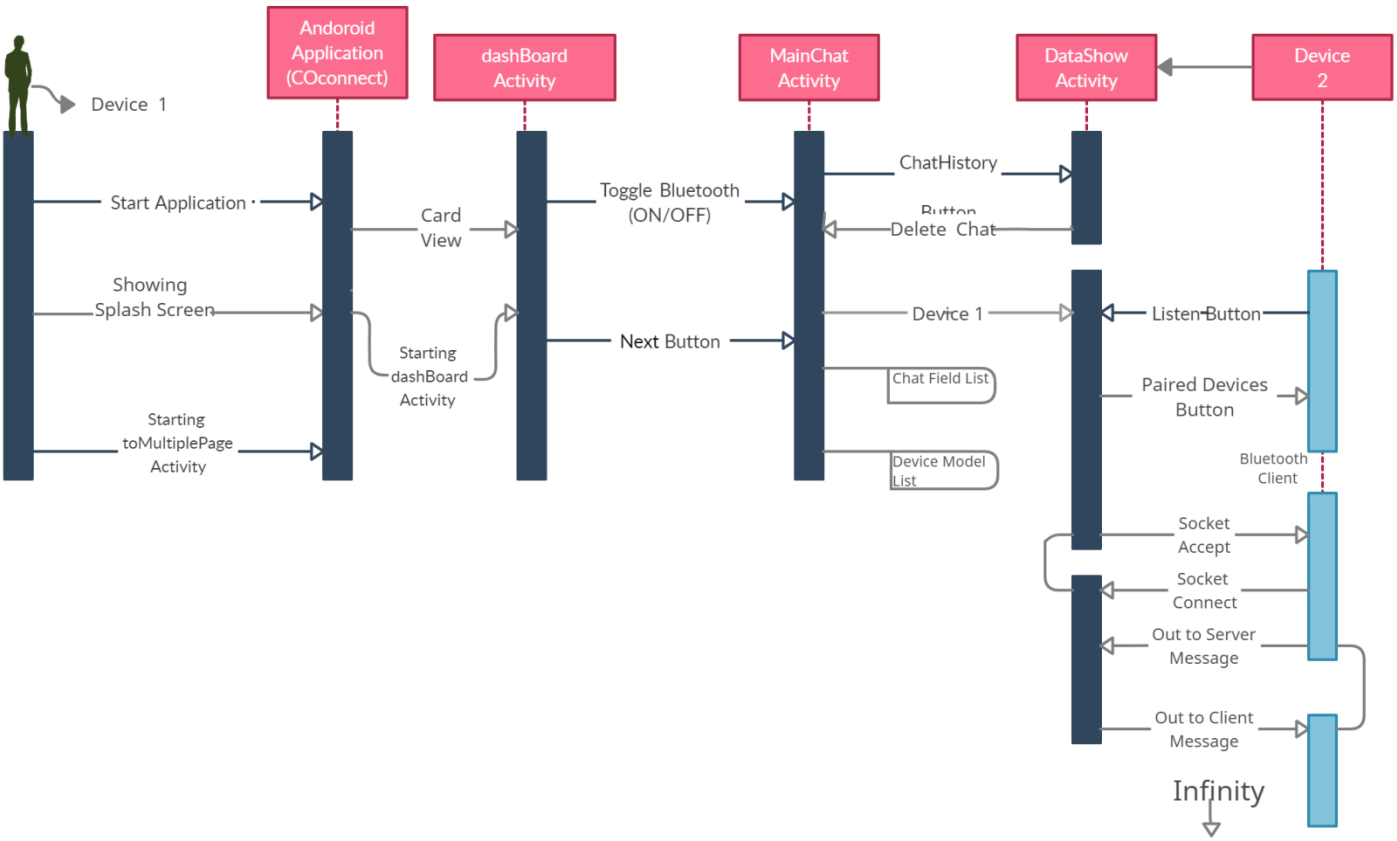


Sequence Diagram:

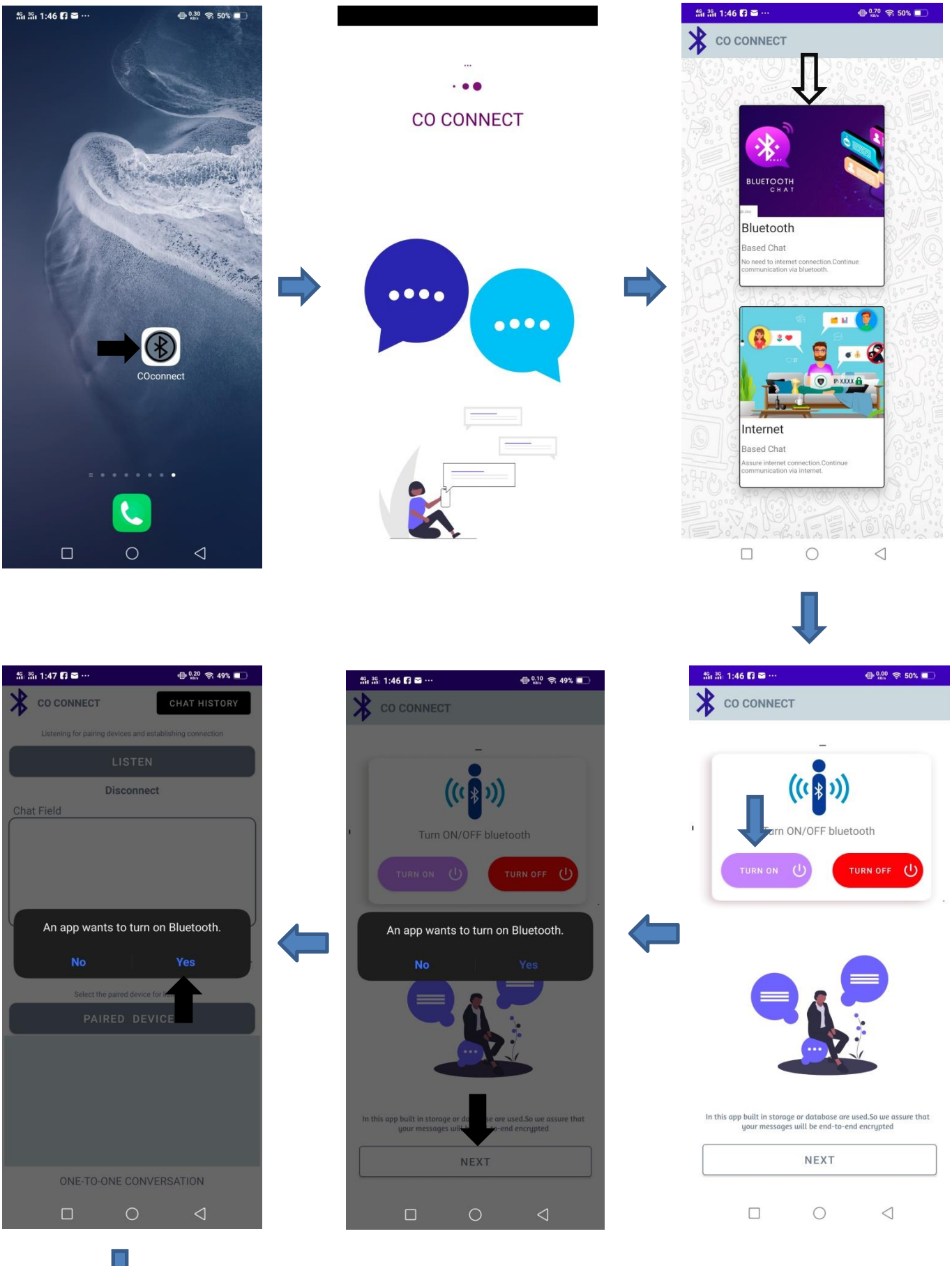
Sequence diagram describe interactions which are used to capture system scenarious as a set of specified occurances across several parts of the system.

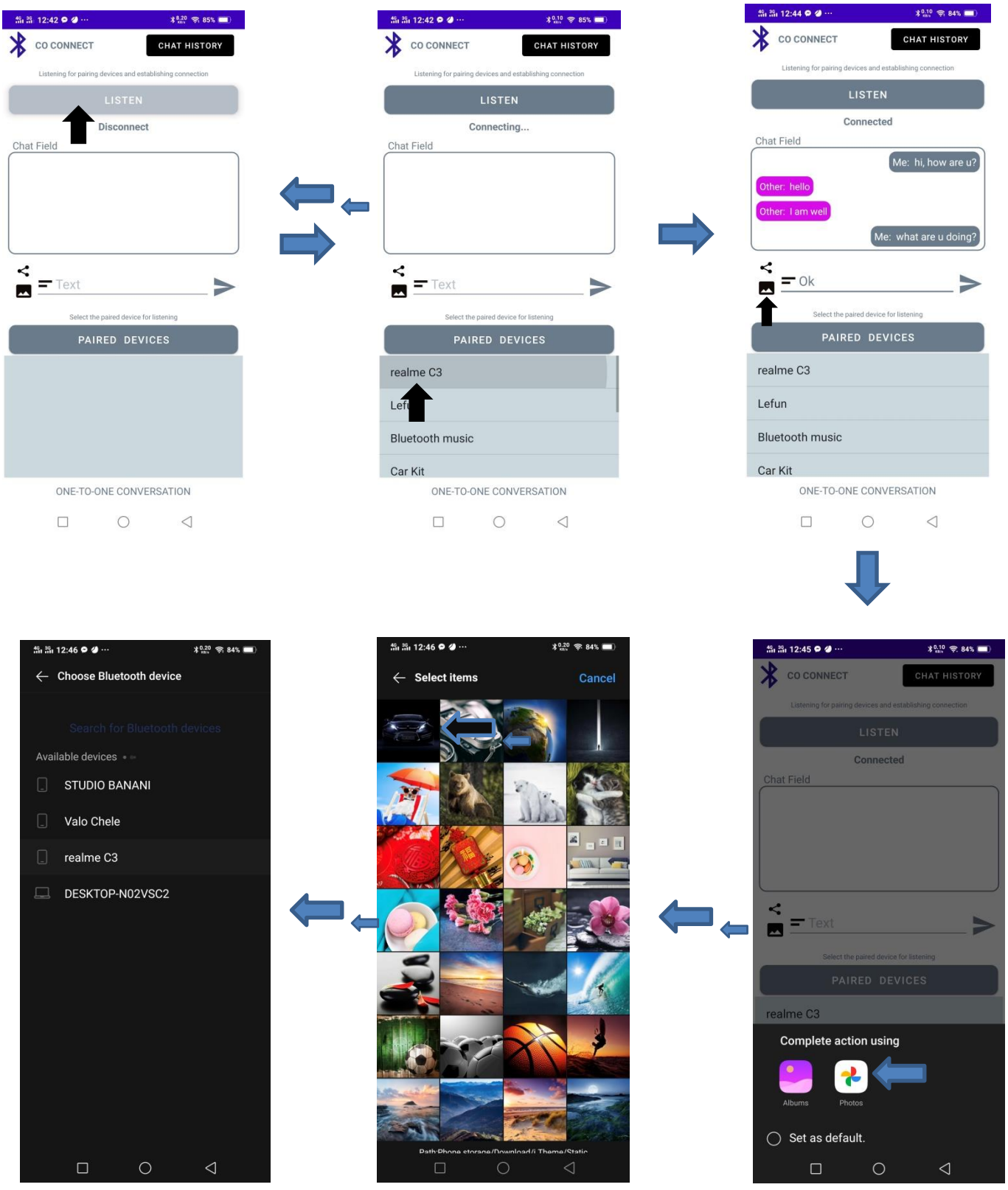
In this diagram it means how the objects are worked in a organized way and what kind of sequential process is maintained for arranging the activities.

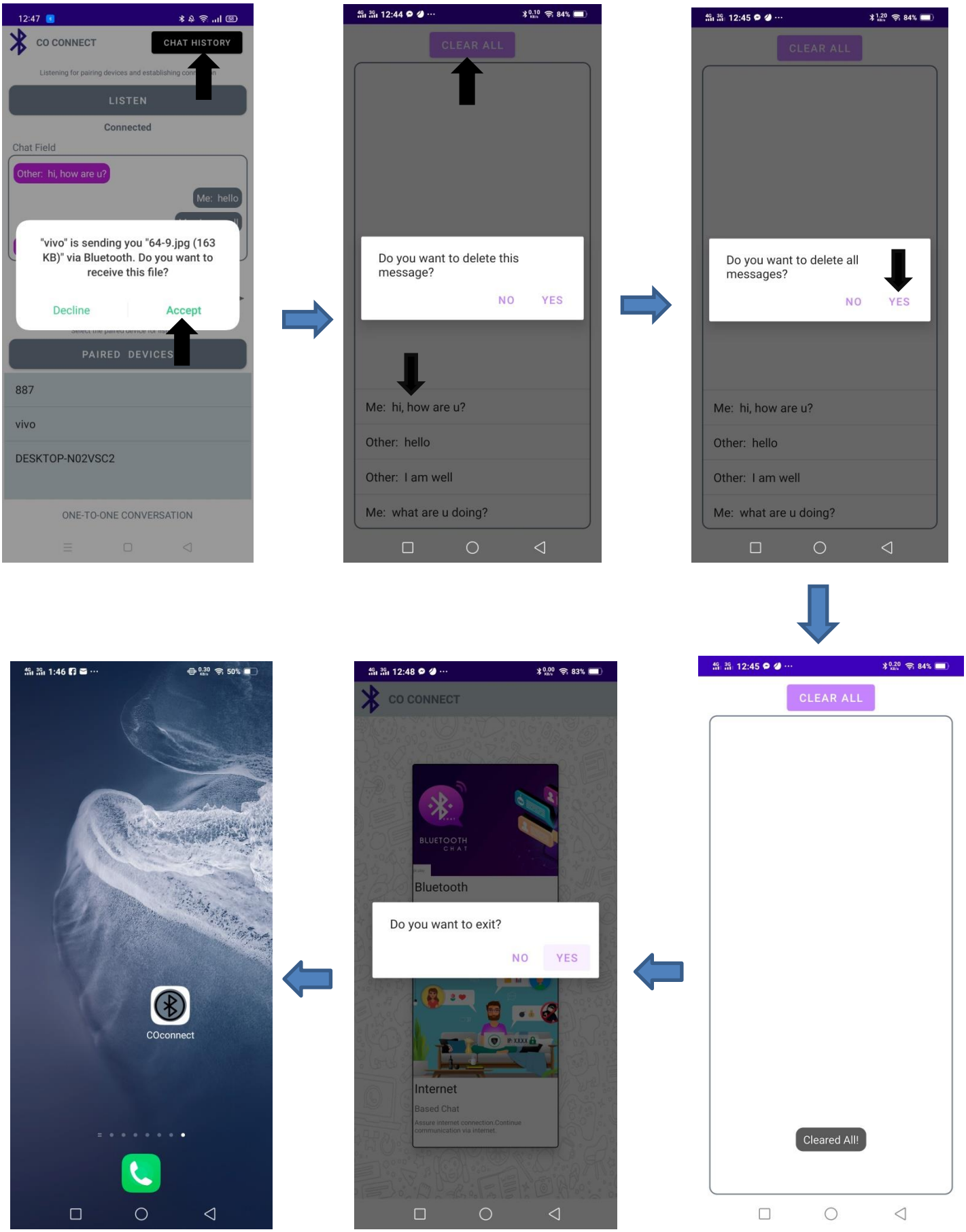
The sequence diagram of my android project :



Detailed Visualization:




CO CONNECT
CHAT HISTORY
Listening for pairing devices and establishing connection
LISTEN
Disconnect
Chat Field
Text
Select the paired device for listening
PAIRED DEVICES
ONE-TO-ONE CONVERSATION
CO CONNECT
CHAT HISTORY
Listening for pairing devices and establishing connection
LISTEN
Connecting...
Chat Field
Text
Select the paired device for listening
PAIRED DEVICES
realme C3
Lefun
Bluetooth music
Car Kit
ONE-TO-ONE CONVERSATION
CO CONNECT
CHAT HISTORY
Listening for pairing devices and establishing connection
LISTEN
Connected
Chat Field
Me: hi, how are u?
Other: hello
Other: I am well
Me: what are u doing?
Ok
Select the paired device for listening
PAIRED DEVICES
realme C3
Lefun
Bluetooth music
Car Kit
ONE-TO-ONE CONVERSATION
Choose Bluetooth device
Search for Bluetooth devices
Available devices
STUDIO BANANI
Valo Chele
realme C3
DESKTOP-N02VSC2
Select items
Cancel
CO CONNECT
CHAT HISTORY
Listening for pairing devices and establishing connection
LISTEN
Connected
Chat Field
Text
Select the paired device for listening
PAIRED DEVICES
realme C3
Complete action using
Albums
Photos
Set as default.


CO CONNECT
CHAT HISTORY
LISTEN
Connected
Chat Field
Other: hi, how are u?
Me: hello
"vivo" is sending you "64-9.jpg (163 KB)" via Bluetooth. Do you want to receive this file?
Decline
Accept
PAIRED DEVICES
887
vivo
DESKTOP-N02VSC2
ONE-TO-ONE CONVERSATION
CLEAR ALL
Do you want to delete this message?
NO
YES
Me: hi, how are u?
Other: hello
Other: I am well
Me: what are u doing?
CLEAR ALL
Do you want to delete all messages?
NO
YES
Me: hi, how are u?
Other: hello
Other: I am well
Me: what are u doing?
CLEAR ALL
Cleared All!
CO CONNECT
BLUETOOTH CHAT
Bluetooth
Do you want to exit?
NO
YES
Internet
Based Chat
Assure internet connection.Continue communication via internet.
COconnect

Target vs. Actual Accomplishments:

In the project , I got an idea to build and develop an application which is android based bluetooth chat application named ‘’Coconnect’’.My target was to make this application using socket programming with the help of bluetooth local area network with all kinds of facilities like a professional application.But i will not be able to develop the application hundred parcent successful.It may be around 90%.

Though i could not face any kind of complex difficulties for user interface designing,it was quite bit painful for backend developing in the application.

My target was to make the facilities to turn on and off the bluetooth inside the application and then connect with other devices through the application.After connecting, the messages are sent and received through the application and these messages will be saved in inbuilt SQLite database in our android device so that from where the messages will be retrieved and shown in the application in organized way.Besides,i wanted to share the photos and files by the same way.But here,i will not be able to doing these implementations because of the lacking of resources and proper video tutorials about it.I implement this functionalities in some other ways.I kept the facilities for sharing all kinds of files through mobile device’s bluetooth sharing system from the application and it was not my actual target.

Overall,I am satisfied for my accomplishments to develop the project.

Risks and Issues:

As the application is offline based ,so there is no way to make the facilities of authentication.As a result,there are some risks about the privacy of messages.

Besides,in the main activity the bluetooth connection is not stable.Sometimes it takes time to connect the device and if the main activity is reloaded the connection is lost.In this application,if we go from chat history page to main activity after deleting data,then the connection is lost and we have to reconnect.This is the main issue of the application.After successfully reconnected,these issues are fixed and the messages are sent and received smoothly.

Discussion & Conclusion:

In this project,i knew about the basic functionalities of android studio and how to build and develop a professional application with thought and ideas by flowing some basic steps.The project is successfully done inspite of having some issues.But true to say there are some minor bugs in this project which is avoidable.

From this project,i learnt about the implementation of the java programming language and how it is used in our real life application.I also known about user interface designing from the project to make my application seems beautiful and user friendly.In a word,this project is the starting path to introduce myself as an android app developer.More basically,my project's topic was android based bluetooth chat application.That means the whole project is about the implementation of socket programming.As it is bluetooth based ,so i add some extra functionalities of bluetooth and here SQLite database is used to show messages in our application through listView.

So,from the project some basic java functionalities are known and also known about the libraries and how to implement libraries in our project through internet.Moreover , i knew about the XML code with it's implementation.

So,the project plays a grate role to improve my skill over android studio and developing skill as an android developer.This knowledge will help me to make another android project easily and make me confidence to develop a huge project which is more benificial for me.Hence,this project is a great inspiration to be a software engineer as well.

References:

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