

# ChitChat P2P Messenger App

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## **Description:**

ChitChat is a **Network Layer messenger application** that runs on Android environment. It supports only **p2p data exchanging**, built using **Native Android**.

## **Features:**

### **1) Base Features:**

- i. Data sending and receiving port.
- ii. A beautiful UI for exchanged data.
- iii. Sharing files.
- iv. Saving conversations.
- v. Changing background option which is visible to both pairs.  
There are a total six background for changing.

### **2) Extra Features:**

- i. Exchanged messages using voice.
- ii. Caesar Cipher encryption & decryption of data for security.
- iii. Splash screen.
- iv. Different types of UI for conversations.
- v. Validation in each step.
- vi. Time of saving chat history.

## **Why it is correct?**

We have implemented all the basic requirements. We have added some extra features that is mentioned above. We have implemented java socket which is the foundation level requirements. The program works so perfectly with the magical GUI. So we think our project is correct.

[Below there is a demo example if you want to skip the guide]

## 1. How to run? [A whole guide]

- a. Take **two separate Android phones** (API 19 or higher). You can run our app on the following devices:

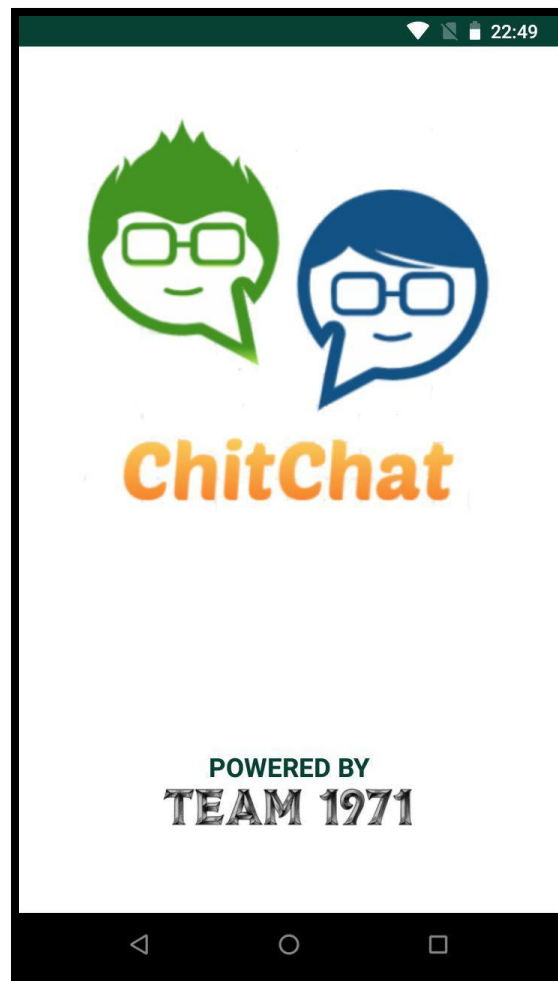
| Codename    | Version     | API level/NDK release |
|-------------|-------------|-----------------------|
| Android 10  | 10          | API level 29          |
| Pie         | 9           | API level 28          |
| Oreo        | 8.1.0       | API level 27          |
| Oreo        | 8.0.0       | API level 26          |
| Nougat      | 7.1         | API level 25          |
| Nougat      | 7.0         | API level 24          |
| Marshmallow | 6.0         | API level 23          |
| Lollipop    | 5.1         | API level 22          |
| Lollipop    | 5.0         | API level 21          |
| KitKat      | 4.4 - 4.4.4 | API level 19          |

- b. **Open the APK** that named **ChitChat.apk**, you can find it on the following location:  
(write the ChitChat app location here)
- c. Once you run the app you can see the following fields:
- Receive port** is your listen port by which you can get data. We can say like that you can get your data in that particular port. You can use any port (except some reserved ports) up to 65535.
  - Start Server** button is the button by which you can start your listening port that is written in the Rec port. If you receive a port is between that ranges you can see a success message.
  - Target IP** is what your other phone's IP is/ your friends phone IP.

- iv. **Target Port** is what your other phone's receiving port. By which you can send your data on that port.
  - v. Press **Connect** for connecting with your pair. If both IP and port is between that ranges you can see a success message. It will redirect you to your chat screen.
  - vi. **En Key** is the encryption key which is used to encrypt exchanged data for security purpose. For both the pair it needs to be same. If don't, you can't send/receive any correct data.
- d. In **chat screen** you can exchange messages, share text files with your pair.
- i. **type your message here** you can type what you want to send to your pair. And there is a send button just like other messenger apps you see.
  - ii. In bottom left there has an **attachment icon** by which you can either share any **text file** from your storage or you can **share any voice message** you want. File will be downloaded for receiver in: **android/data/com.example.p2p/** (need to add the validation whether the file is a text or not)
- e. In top right corner you can see a **menu bar**. Tap the menu bar and it will pop up 3 options.
- i. By clicking **Save Chat**, you can save your exchanged messages. The chat will be saved on: **android/data/com.example.p2p/**
  - ii. By clicking **Change Background**, you can change your chat background for both of you and your pair.
  - iii. By clicking **Disconnect**, you can disconnect your chat with your pair.

## 2. App Images and steps:

Splash screen:



You can't leave any value except Encryption Key.

The screenshot shows the 'Chit Chat' app interface on a mobile device. The status bar at the top indicates the time is 22:54. The app's title bar is dark green with the text 'Chit Chat' and a menu icon. The main content area is white and contains several input fields and buttons. The 'Rec Port:' field has a placeholder 'Receiving Port' and a red exclamation mark icon, indicating an error. A black tooltip with white text 'Please write your receive port first' is displayed over the field. Below the tooltip is a dark blue button labeled 'Start Server'. The 'Target IP:' field has a placeholder '192.168.1.'. The 'Targ Port:' field has a placeholder 'Target Port'. The 'En key:' field has a placeholder 'encryption key'. Below these fields is a dark blue button labeled 'Connect'. At the bottom, there is a link that says 'Don't know your IP address? click here to know' and a dark blue button labeled 'Get IP'. The bottom of the screen shows the Android navigation bar with back, home, and recent apps icons.

Chit Chat

Rec Port: Receiving Port

Please write your receive port first

Start Server

Target IP: 192.168.1.

Targ Port: Target Port

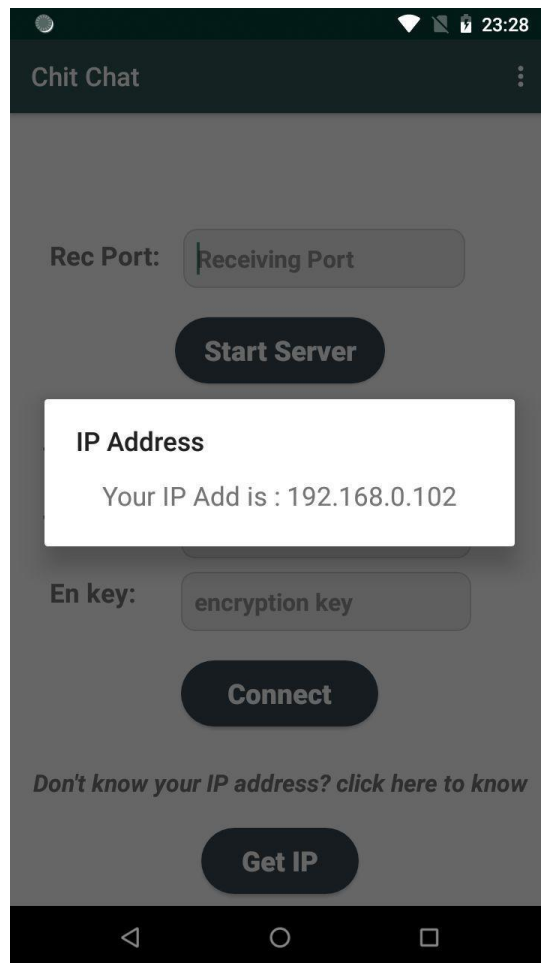
En key: encryption key

Connect

Don't know your IP address? click here to know

Get IP

Getting own IP address:



Importing values:

Chit Chat

Rec Port: 8080

**Start Server**

Target IP: 192.168.0.101

Targ Port: 8888

En key: 15

**Connect**

*Don't know your IP address? click here to know*

**Get IP**

Chit Chat

Rec Port: 8888

**Start Server**

Target IP: 192.168.0.102

Targ Port: 8080

En key: 15

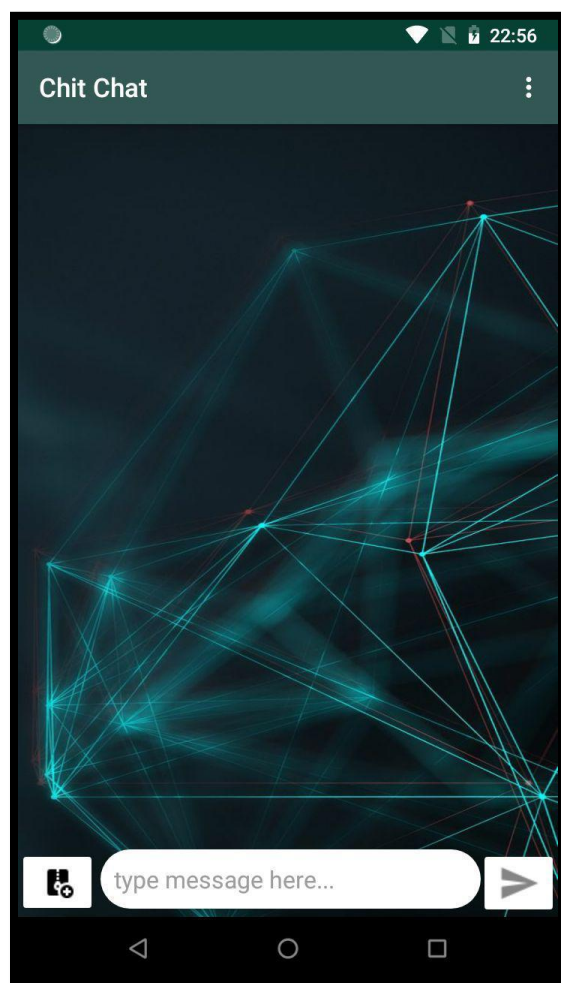
**Connect**

*Don't know your IP address? click here to know*

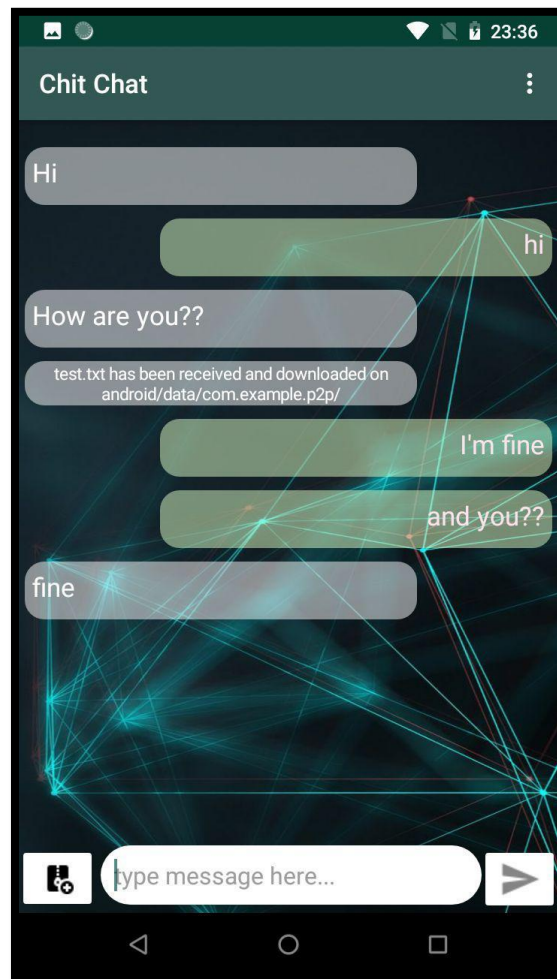
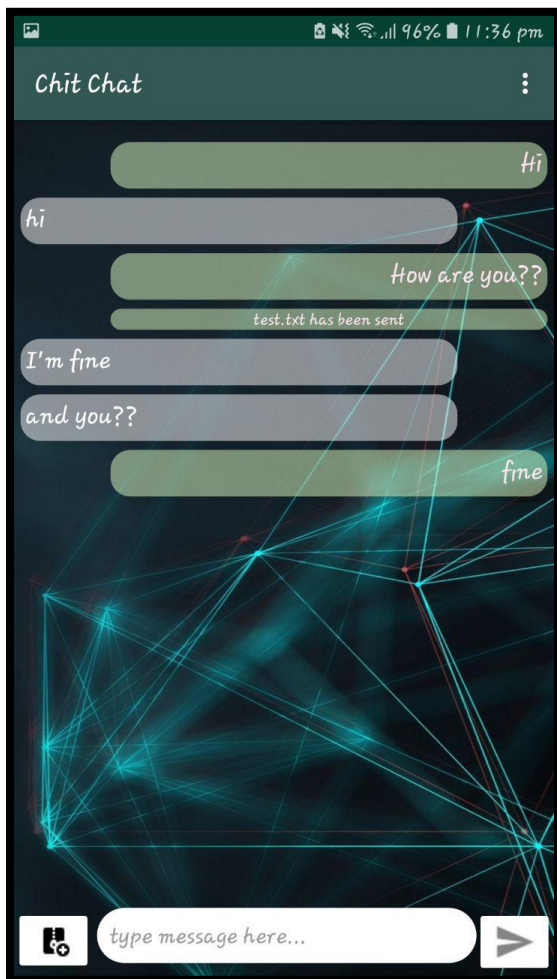
**Get IP**



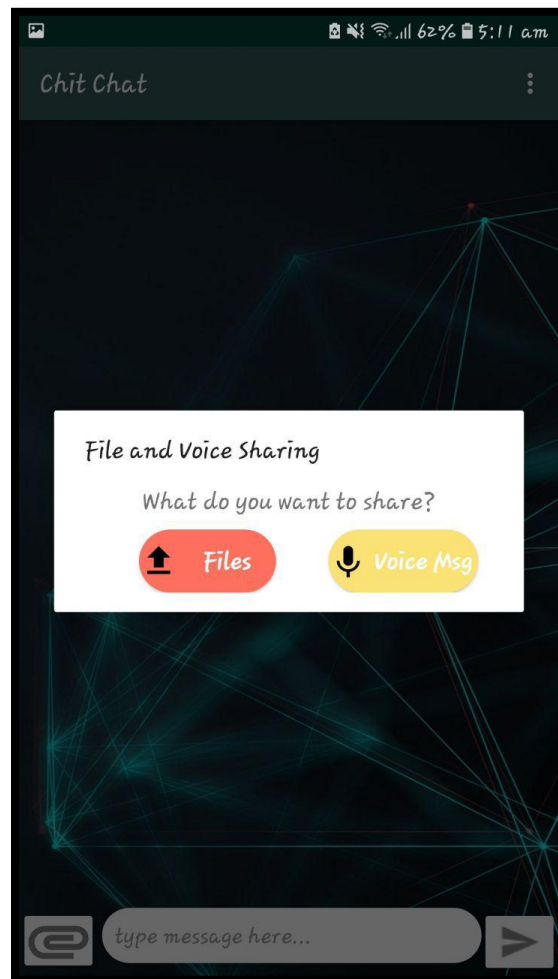
If everything is okay then the chat screen will be appeared:



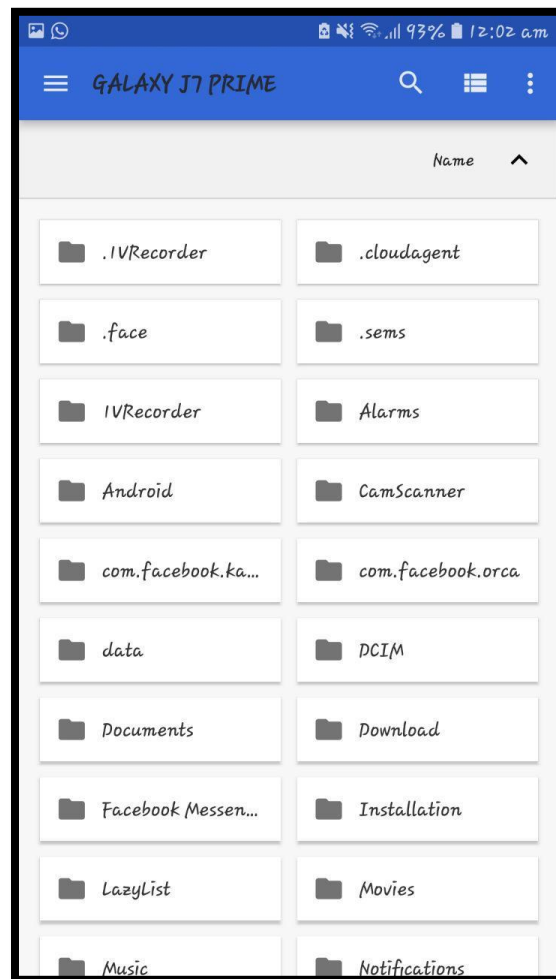
Exchanging messages from both ends:



Attachment popups two more functionalities:



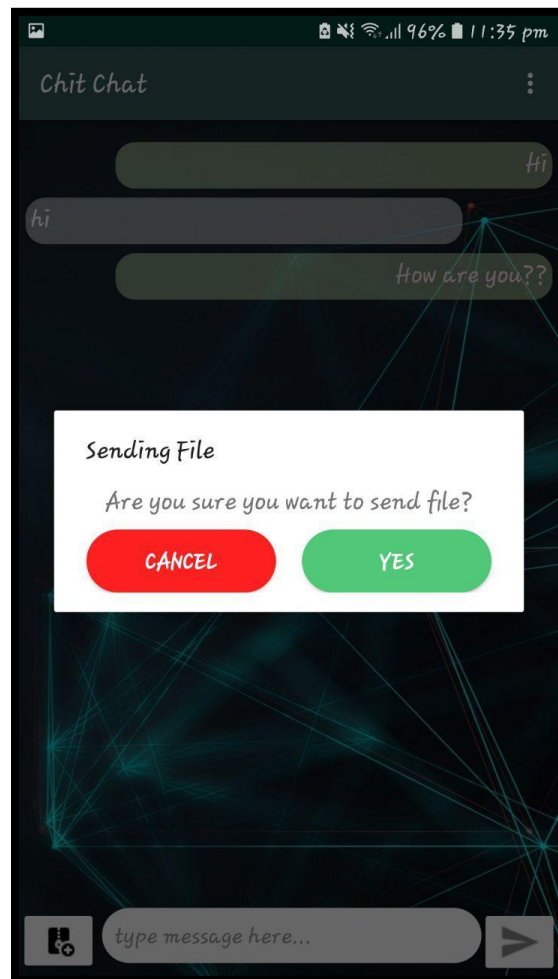
Sending file needs to be choose from storage:



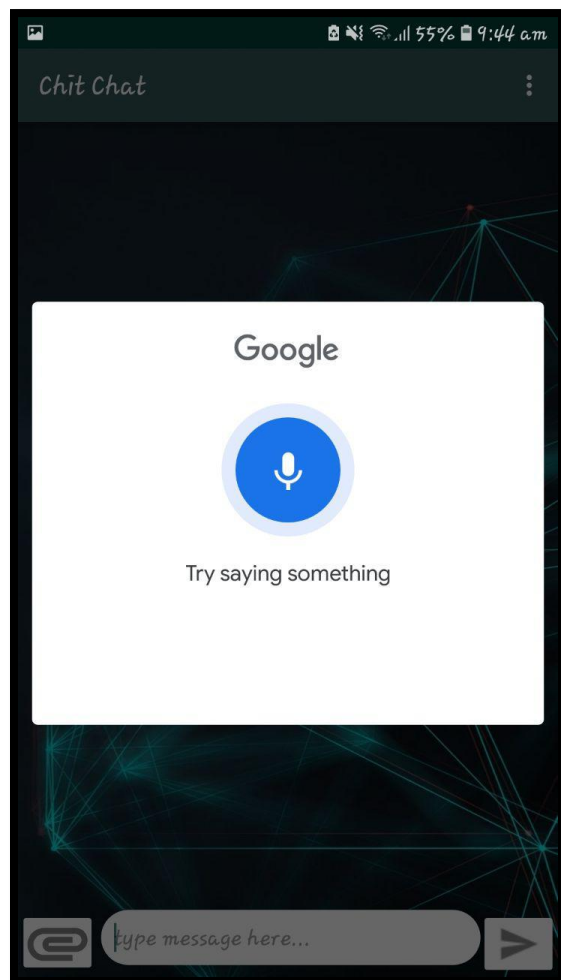
You can select text file only:

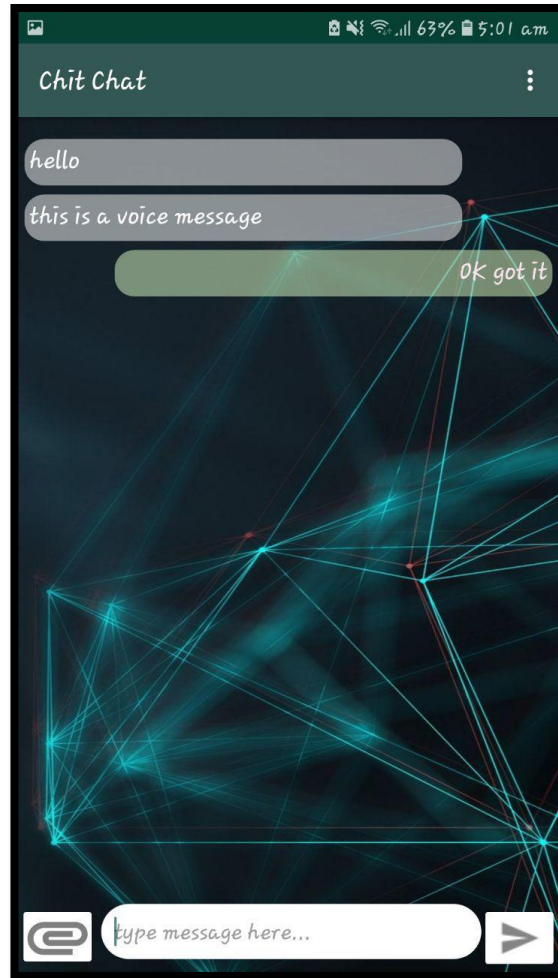
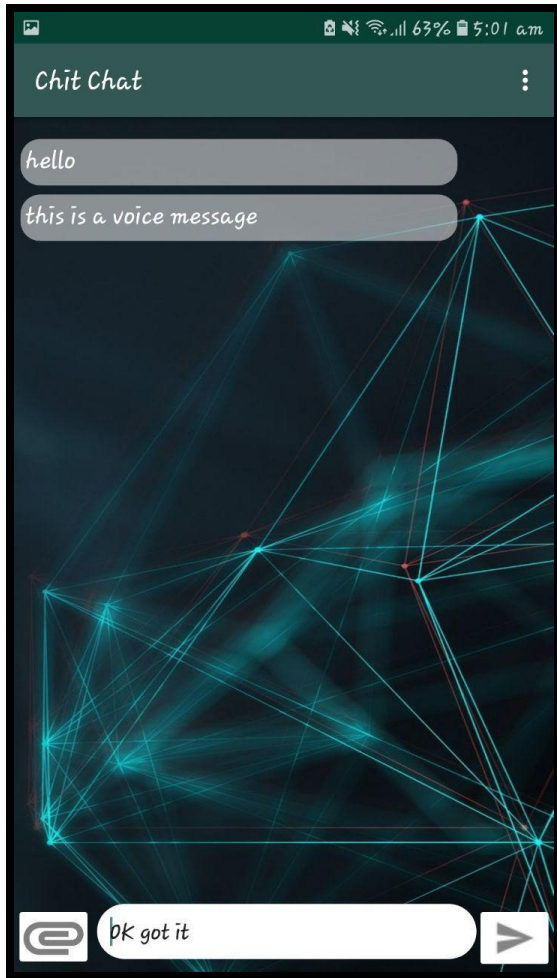


Needs confirmation after selecting the file:



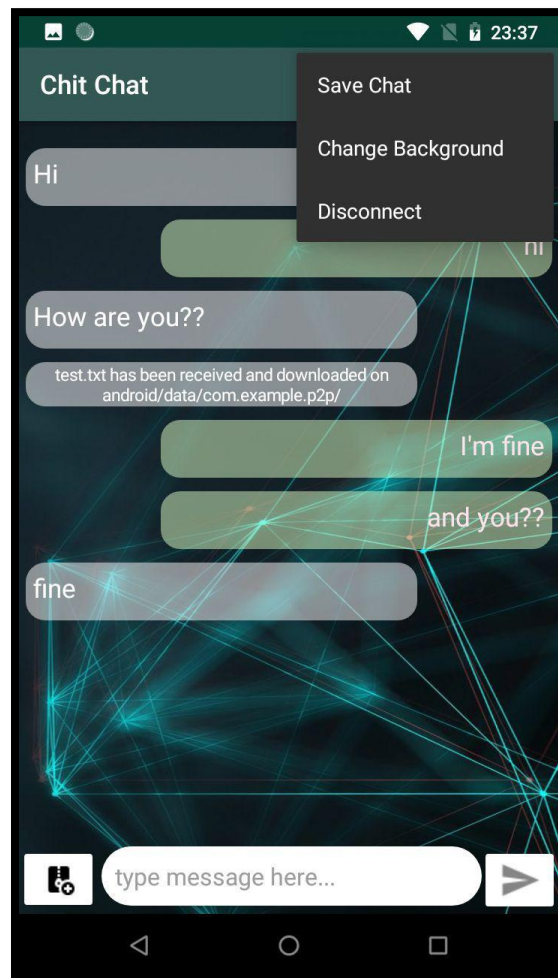
Sending voice messages look so easy:



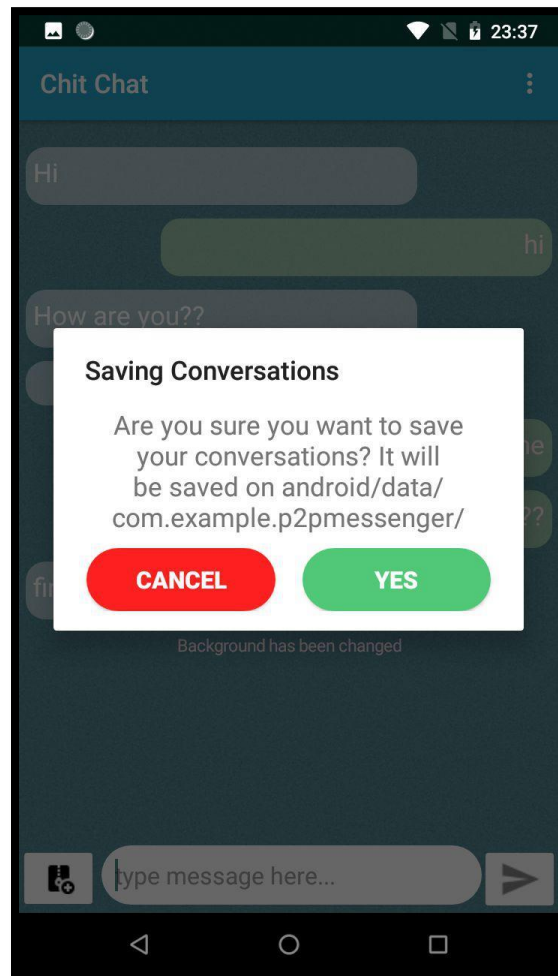




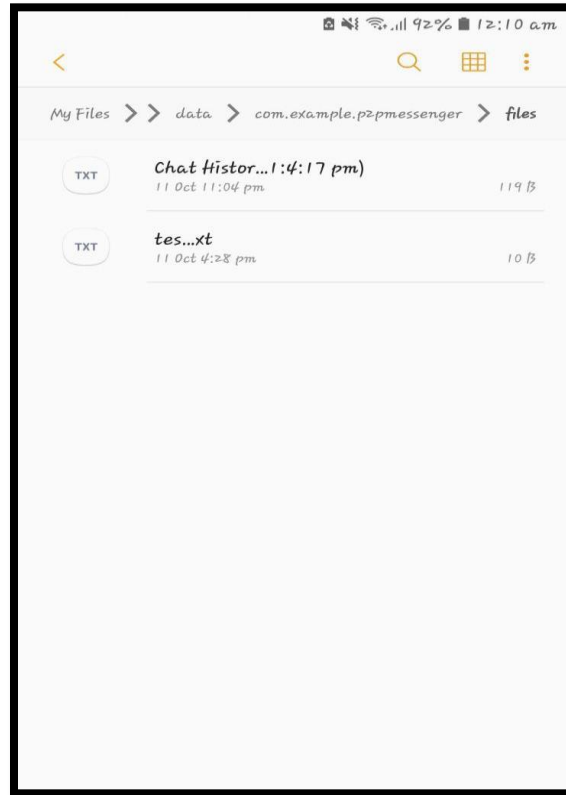
Clicking on the menu bar popups 3 menu items:



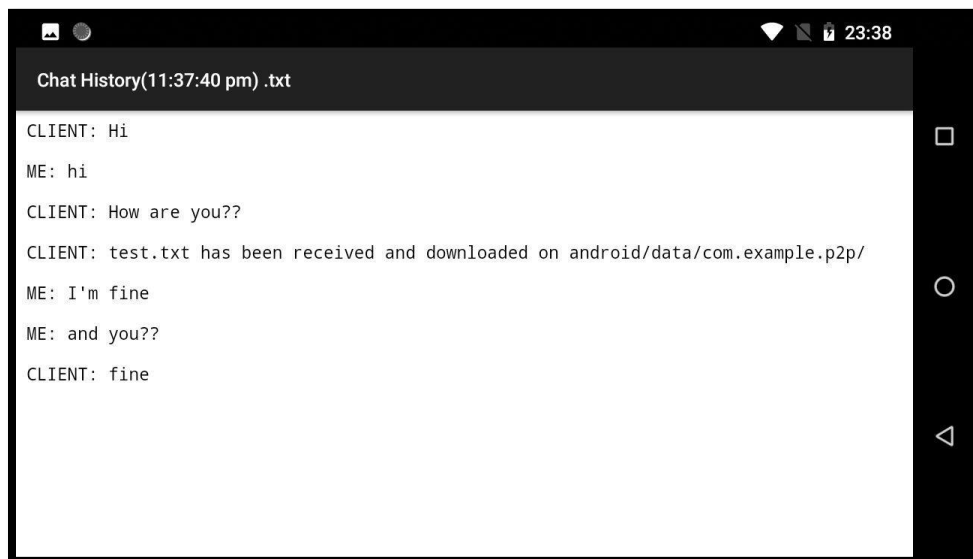
Clicking on Save Chat needs confirmation whether to download the exchanged messages or not.



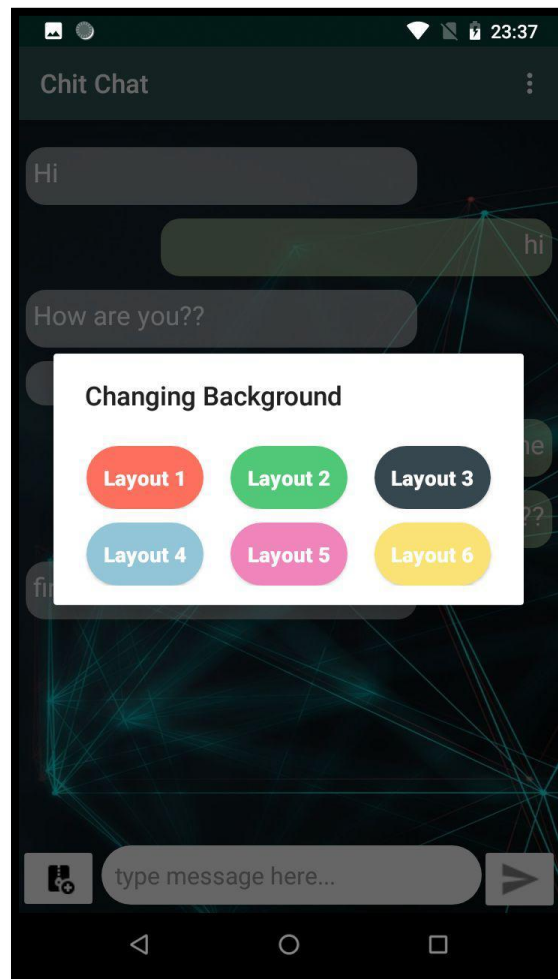
Received file and saving conversations located:



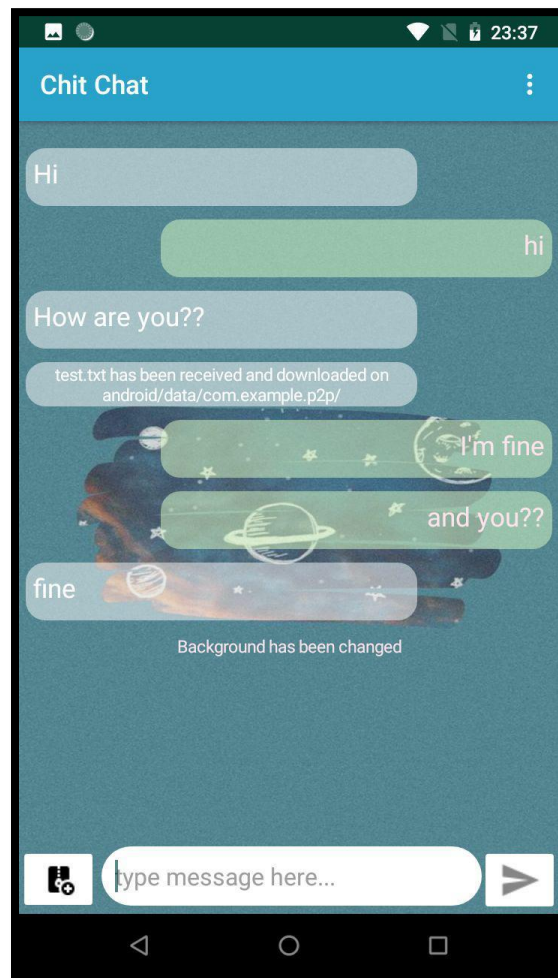
Saving the conversations as Chat History(current\_time).txt



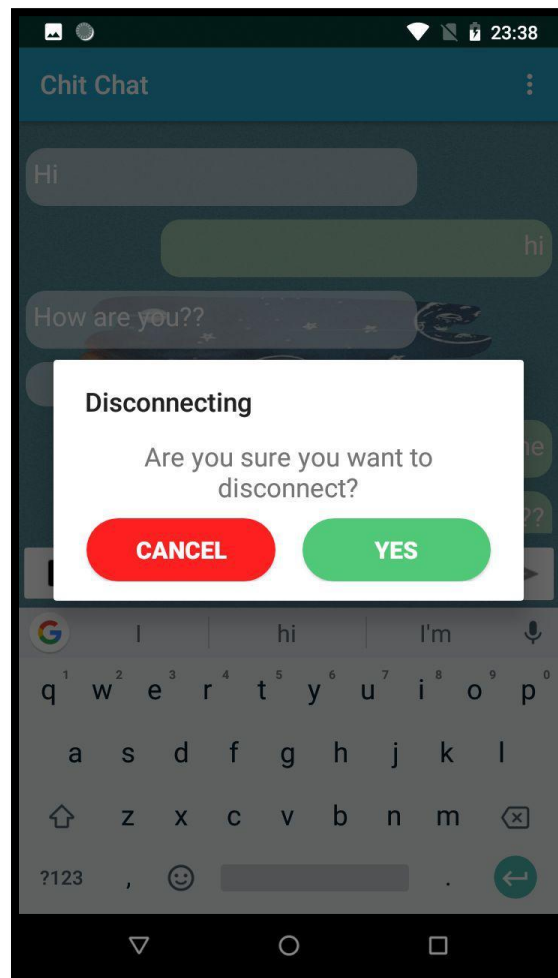
Changing background looks so easy. You got overall six layouts to choose one.



Hola! So cool...



Disconnecting yourself from chat needs validation



You have been disconnected from your pair and hence both of your listening port and transmitting port has been disconnected.

The screenshot shows the 'Chit Chat' app interface on a mobile device. The status bar at the top indicates the time is 23:39. The app title 'Chit Chat' is in the top bar. The main content area has a light gray background. It contains four input fields with labels: 'Rec Port:' with value '8080', 'Target IP:' with value '192.168.0.101', 'Targ Port:' with value '8888', and 'En key:' with value '15'. Below these fields are two dark blue buttons: 'Start Server' and 'Connect'. A link text '*Don't know your IP address? click here to know*' is positioned below the 'Connect' button. At the bottom, a semi-transparent gray box displays the text 'chat is disconnected' and a 'Get IP' button.

Chit Chat

Rec Port: 8080

Start Server

Target IP: 192.168.0.101

Targ Port: 8888

En key: 15

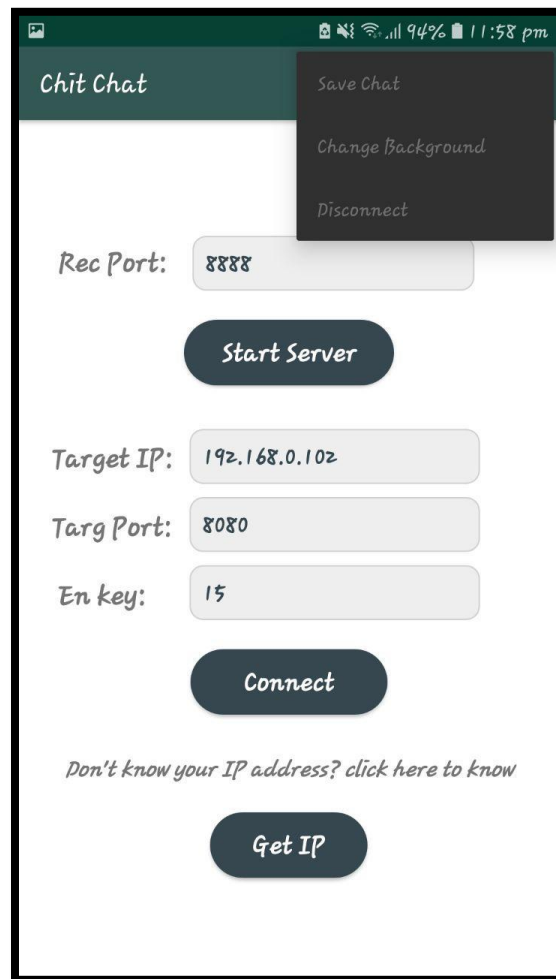
Connect

*Don't know your IP address? click here to know*

chat is disconnected

Get IP

Trying to crash my app by clicking on the menu items, huh? **Error 404**





If you connect with your pairs and encryption key is different, you can't get the actual messages as the app cares for your data most.

The screenshot shows the 'Chit Chat' app interface. At the top, the status bar displays the time as 00:57. The app title 'Chit Chat' is in the top bar. Below the title, there are four input fields: 'Rec Port:' with the value '8080', 'Target IP:' with the value '192.168.0.101', 'Targ Port:' with the value '8888', and 'En key:' with the value '5'. Below these fields are two buttons: 'Start Server' and 'Connect'. At the bottom, there is a link that says 'Don't know your IP address? click here to know' and a button labeled 'Get IP'.

The screenshot shows the 'Chit Chat' app interface. At the top, the status bar displays the time as 12:56 am and the battery level as 87%. The app title 'Chit Chat' is in the top bar. Below the title, there are four input fields: 'Rec Port:' with the value '8888', 'Target IP:' with the value '192.168.0.102', 'Targ Port:' with the value '8080', and 'En key:' with the value '15'. Below these fields are two buttons: 'Start Server' and 'Connect'. At the bottom, there is a link that says 'Don't know your IP address? click here to know' and a button labeled 'Get IP'.

