ReDI School of Digital Integration

# Chatting Application on Local Network

## Python (Hybrid) Final Project

**Komal Chandrakant Bhapkar**

We use tech to connect human potential and opportunity with dignity & humility

# Want to Chat with your Friends ? Use my Chatting App ....

# Tools & Concept

The project was created using Python along with the following libraries & Concepts:

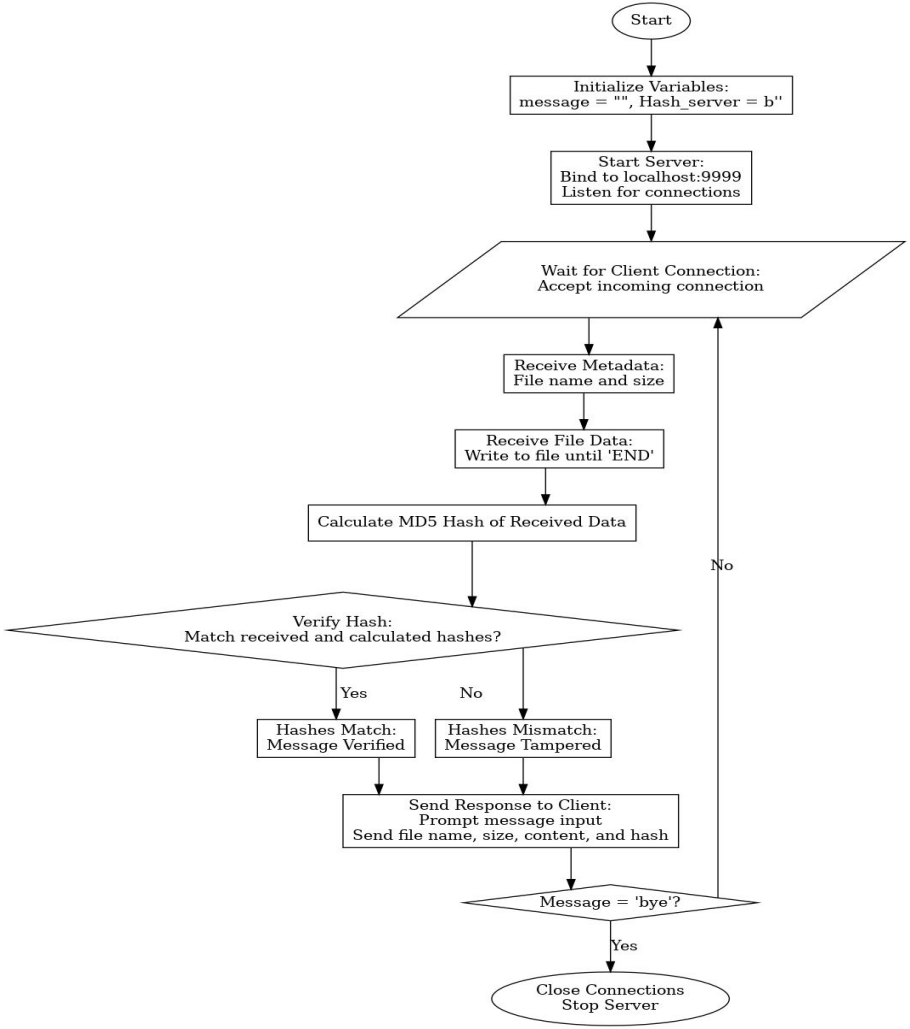
- **Socket**: For opening socket between users and transmitting the files
- **OS**: For extracting basename and File Size
- **Hashlib**: For calculating MD5 hash of message
- **Time**: For inserting delay for synchronisation between users
- **File Handling :** For reading and writing files
- **Exception Handling :** To avoid runtime errors
- **OPPs :** Hash Calculation is implemented using OPPs methods

I want to build a project which everyone can use in day to day life , my chatting app we can use easily across local network for easy & secure communication without internet. We can use it in classroom where mobile phones are not allowed. My Chatting apps helps me to explore Socket concept..

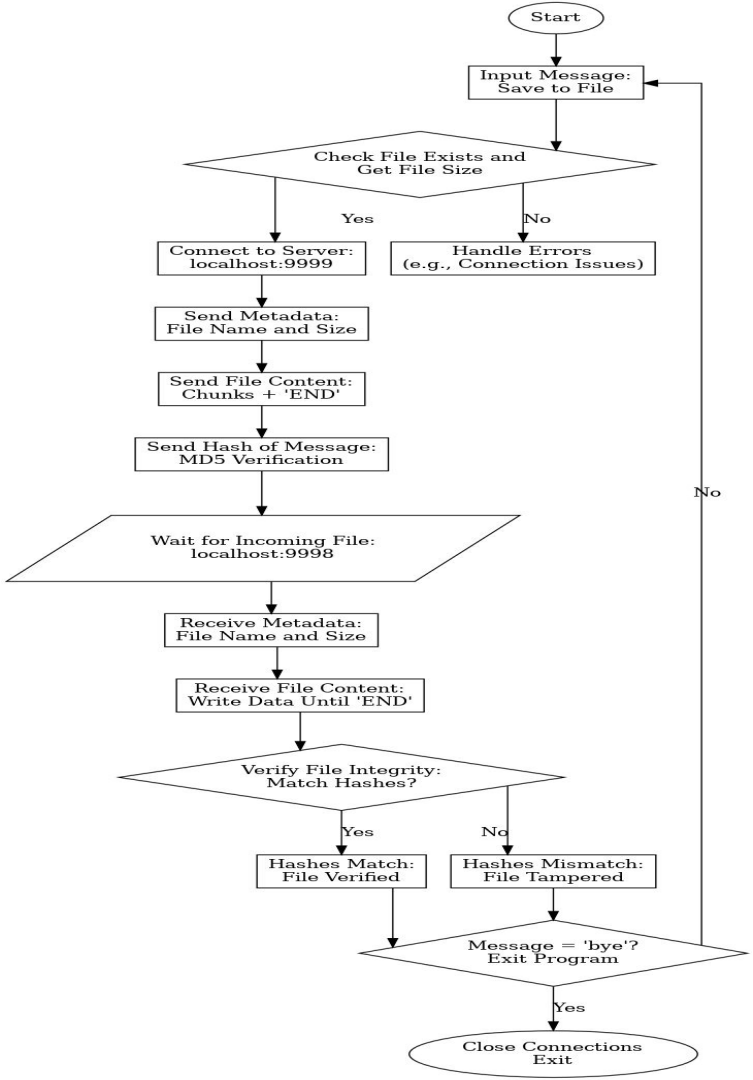
# Overview of Chatting App

- There are two codes for two users Server and Client
- Both users are having their Text files and their socket for file transmission
- Server is opening the Socket & waiting for Client
- Client is connecting to the Server via Socket
- Client write message into its Text file & Calculate Hash of that message
- Client send its Text file to Server, after that it also send Hash
- Server receives the Text file from Client , write its content into its (Server's) Text file
- Server calculate Hash from Received message
- Server compares Calculated Hash with Received Hash , if it matches then it Read the Message, otherwise it prints 'Message is Tempered'
- To send message to Client ,Server follows same process as the Client
- Chatting get close if Server sends 'bye' message

# Flow Chart of Server Code:



# Flow Chart of Client Code:



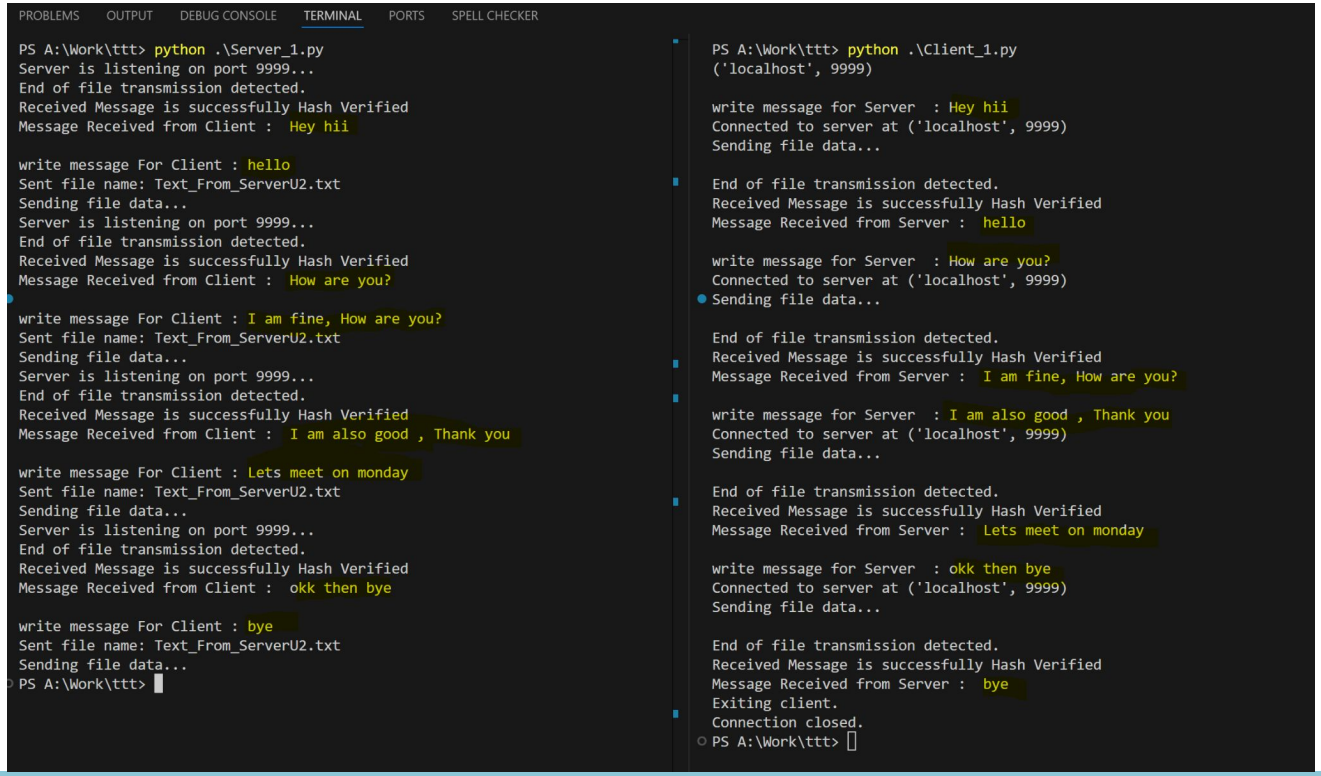
# Real World Implication

- Chat App use for Seamless chatting in local area network
- It provide secure communication, since messages are protected by MD5 Hash

# Difficulties in building Chat App

- Sometimes length of the message ,actual message and hash of the message are getting append
- Synchronisation between users was a challenge socket connection was getting close before expectation
- I resolved them by adding sleep function of time library
- Socket closure was not handled by one user, so I implemented a patch of code which gives authority to Server python script to close the socket

# Result


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SPELL CHECKER
PS A:\Work\ttt> python .\Server_1.py
Server is listening on port 9999...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Client : Hey hii
write message For Client : hello
Sent file name: Text_From_ServerU2.txt
Sending file data...
Server is listening on port 9999...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Client : How are you?
write message For Client : I am fine, How are you?
Sent file name: Text_From_ServerU2.txt
Sending file data...
Server is listening on port 9999...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Client : I am also good , Thank you
write message For Client : Lets meet on monday
Sent file name: Text_From_ServerU2.txt
Sending file data...
Server is listening on port 9999...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Client : okk then bye
write message For Client : bye
Sent file name: Text_From_ServerU2.txt
Sending file data...
PS A:\Work\ttt>
PS A:\Work\ttt> python .\Client_1.py
('localhost', 9999)
write message for Server : Hey hii
Connected to server at ('localhost', 9999)
Sending file data...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Server : hello
write message for Server : How are you?
Connected to server at ('localhost', 9999)
Sending file data...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Server : I am fine, How are you?
write message for Server : I am also good , Thank you
Connected to server at ('localhost', 9999)
Sending file data...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Server : Lets meet on monday
write message for Server : okk then bye
Connected to server at ('localhost', 9999)
Sending file data...
End of file transmission detected.
Received Message is successfully Hash Verified
Message Received from Server : bye
Exiting client.
Connection closed.
PS A:\Work\ttt>

# Future Improvements

- Use the app for secure File transfer
- Add multiple users
- Enhance the App on WLAN