COMMUNICATION OF INTER-CONNECTED DEVICES

by

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BONAFIDE CERTIFICATE

Certified that this project report entitled "**COMMUNICATION OF INTERCONNECTED DEVICES"** is a bonafide work of **MEHUL NAGAR (16BLC1084) and MOHIT SONI (16BLC1088)** who carried out the Project work under my supervision and guidance.

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ABSTRACT

COMMUNICATION OF INTER-CONNECTED DEVICES, in which Users (Clients) connected on a single host via Wi-Fi, LAN or Wired can communicate with each other in a group and also via personal chat via HTTP server running from a Server Host.

Not only that, the clients can also share Files from the HOST machine. It's just like a ShareIT app where you can transfer files with an enormous speed up to 150Mbps.

GROUP & PERSONAL CHAT:

- Every user when connected on the host machine will be assigned an ID and using that ID, the personal chat algorithm will be carried out.
- If the user logs out from the server, that ID too will be deleted and will be assigned to any new user who connects in sequence.

FILE TRANSFER:

- File Transfer is carried out by using the HTTP Server running in the HOST Machine.
- Clients make a request to the Host Machine, with the file name and path.
- Host Machine checks for the existence of the file and if the file is available, it transfers the same via HTTP Server.

ACKNOWLEDGEMENT

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MEHUL NAGAR

MOHIT SONI

1. INTRODUCTION

1.1 OBJECTIVES AND GOALS

- Create an App on which Clients can Transfer Files & Communicate.
- Create a separate room for Group & Personal Chat.

1.2 BENEFITS

- Wireless File Transfer.
- Communication without violation personal privacy.

1.3 FEATURES

- Simple Socket Server App.

2. COMPONENTS

2.1 INTERPRETERS & LIBRARIES:

- Python 3.6.4
- Socket Server
- Wi-Fi
- Raspberry-Pi (As in another Client)

3. WOKRING

3.1 WORKING:

- A Server script will run from the Host Machine on an **Internet Physical Address** with a specified **PORT Number** on which the Clients can connect to establish a connection.
- Clients on the other hand using the Client Script connect on the same IP and PORT address.
- After the establishment of the connection, Clients will be introduced with the basic Syntax of the project

- i.e. How to send message in group
- send message personally
- How to transfer File

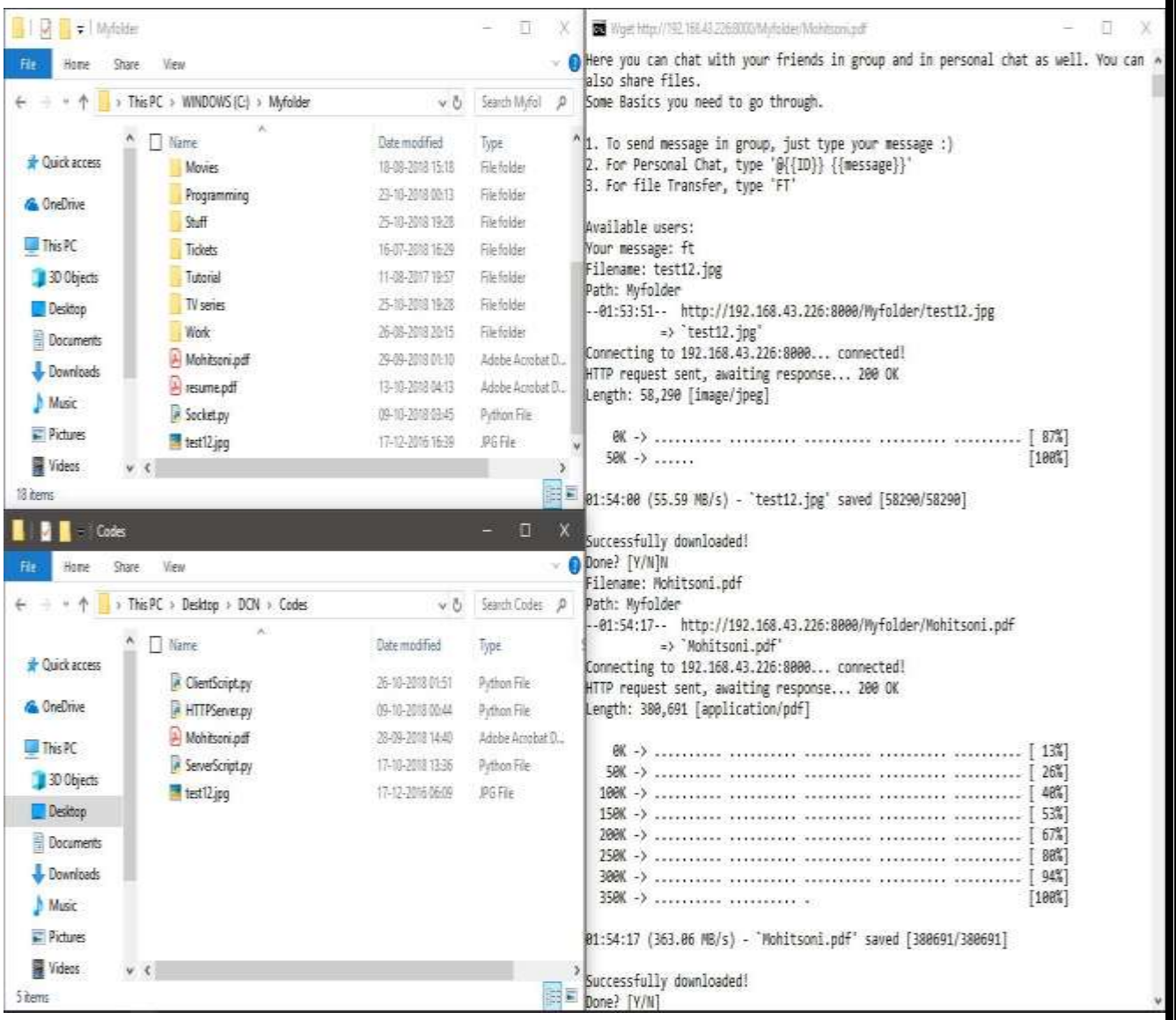
WELCOME CLIENT MESSAGE:

In the following **Fig.,** we can see the syntax to perform several operations like Personal & Group Chat

4. DEMONSTRATION

4.1 CHAT

4.2 FILE TRANSFER:



1. File Transfer.webm

Well, the above File is also available in the CD submitted in Video Folder, in that you can see the File transfer from the Host Machine to the Client.

5. CONCLUSION AND FUTURE WORK

5.1 CONCLUSION

- A Socket Server was implemented using Python 3.6.4 with Socket Library.
- Simple and Hassle-free File Transfer System.
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5.2 FUTURE WORK

- We can Implement a good GUI for better experience.
- We can increase the limitations of number of users connected at the same using Powerful Wi-Fi routers.

6. REFERENCES

1. http://google.com
2. JournelDev
3. Python Documentation
4. TutorialsPoint
5. GeeksForGeeks