



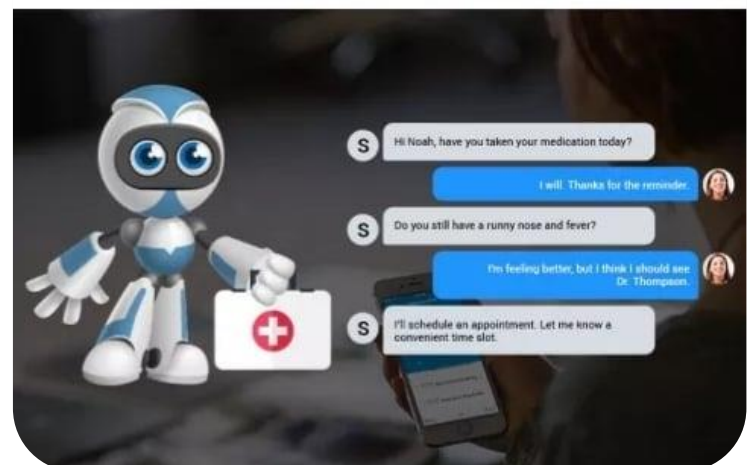
SOCKET PROGRAMMING PROJECT (ON YOUR SERVICE)

Supervised By:

Eman N. Marzban

Executed By:

1. Heba Ali
2. Samar Ibrahim
3. Menna Rafaat
4. Ghada Adel
5. Toaa Mahmud
6. Poline Atef



Type of our application:

We made a **telemedicine** chatbot.

telemedicine can lower healthcare costs, drive up efficiency and revenue, provide your patients better access to healthcare services, and ultimately get happier, healthier patients who stay in your organization.

How our application works:

We made a multi-connection server that will allow a lot of client to benefit from the server at the same time. We did that using threading which allow us to use multiple threads for the same python program.

We use dictionary in python. When the clients ask a certain question, we get the answer from the dictionary.

The user will interact with the server through application which contains the client code. Which means the application is inside the main.py?

Type of protocol:

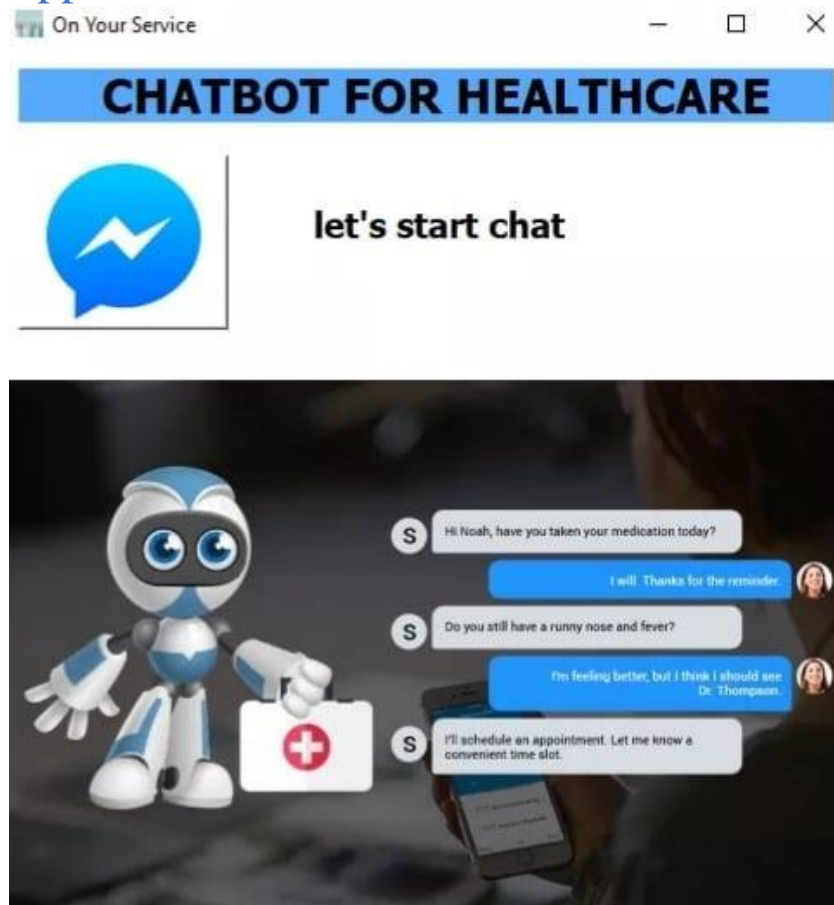
We used **TCP**

Why did we use TCP?

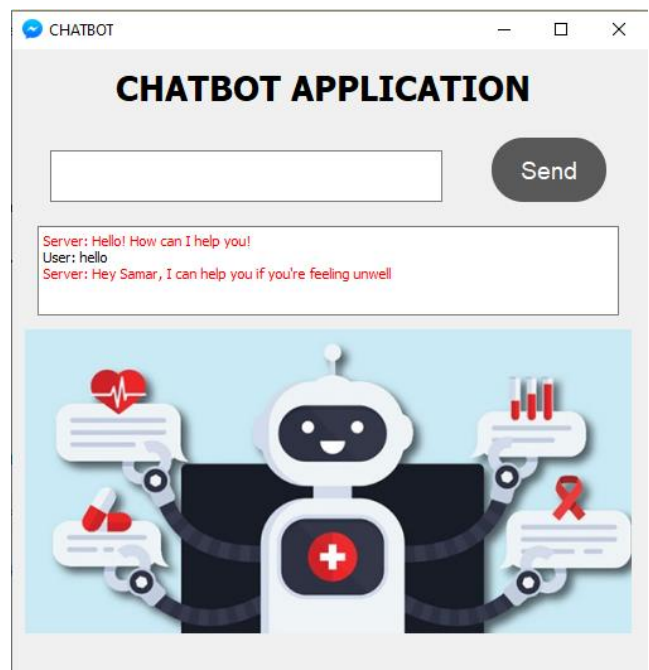
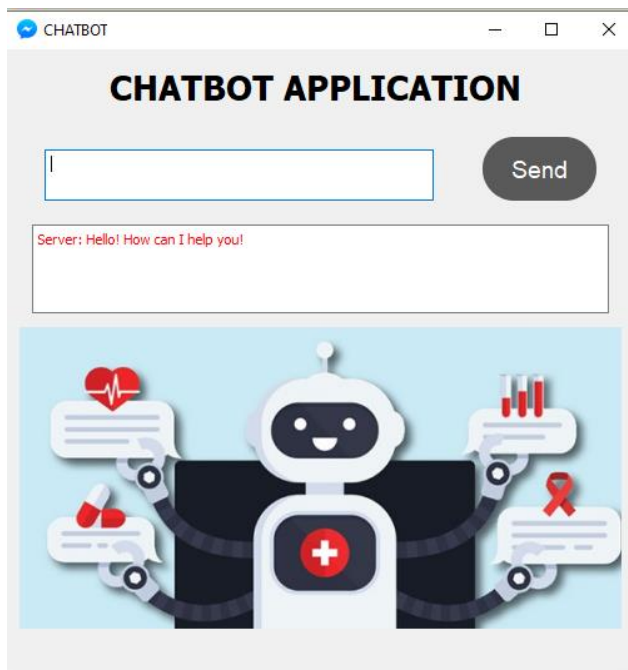
Is reliable: packets dropped in the network are detected and retransmitted by the sender.

Has in-order data delivery: data is read by your application in the order it was written by the sender.

This how our application looks like:

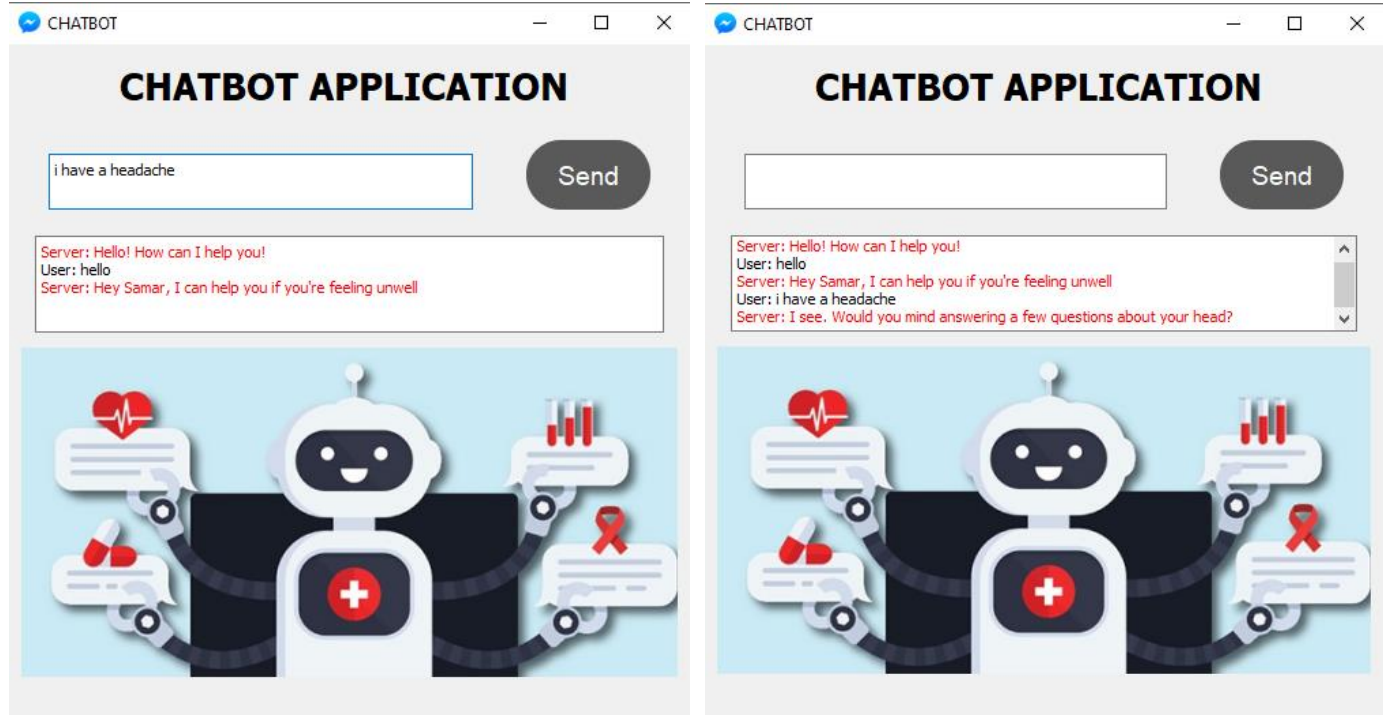


The home page

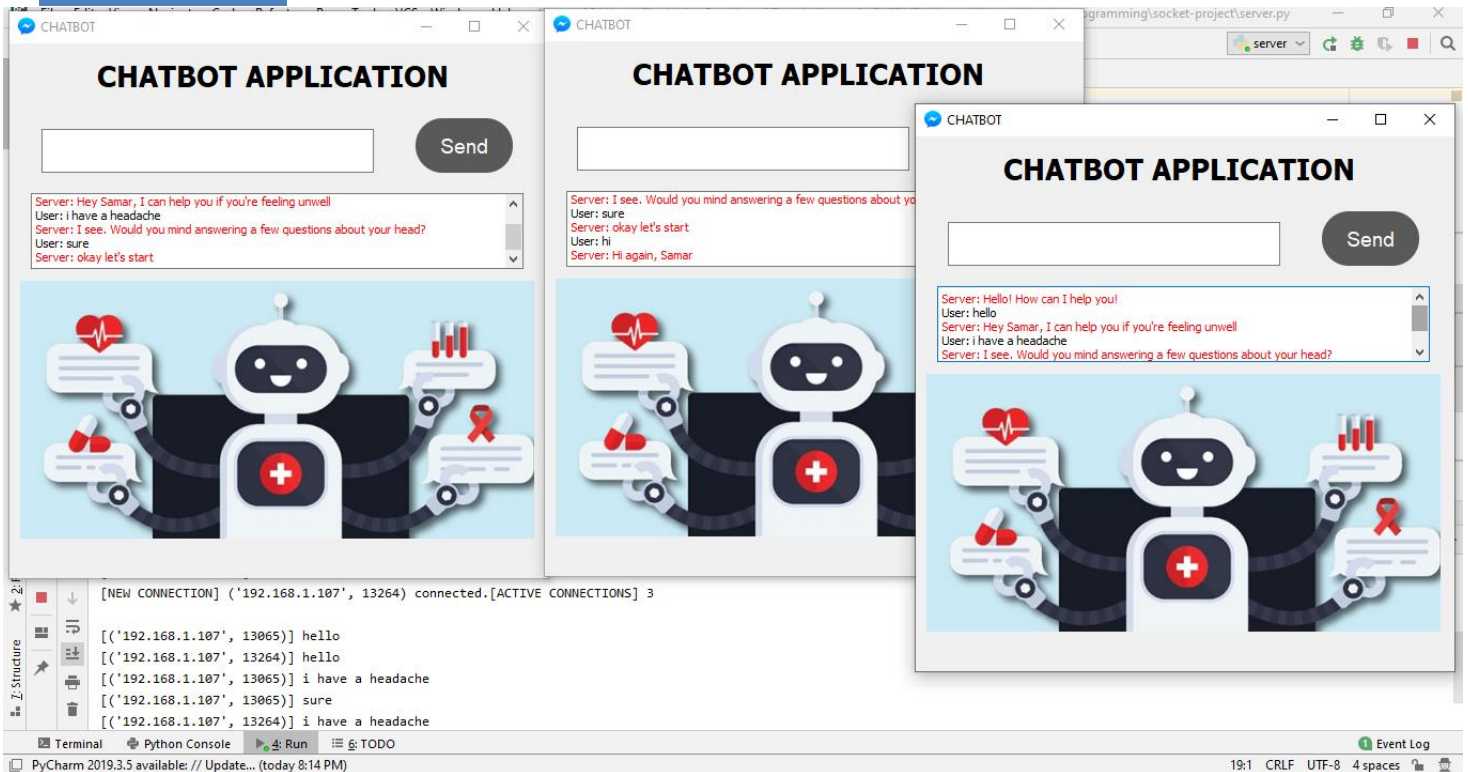


The Chatbot

The chatting between the client & the server:



The multiconnection between the server & 3 clients at the same time:



```
Run: server x server (1) x
C:\Users\Ghada\Anaconda3\python.exe "E:/SBME_4th year/Network/socket programming/socket-project/server.py"
[STARTING] server is starting...
[LISTENING] Server is listening on 192.168.1.107
[NEW CONNECTION] ('192.168.1.107', 12054) connected.[ACTIVE CONNECTIONS] 1

[('192.168.1.107', 12054)] hello
[('192.168.1.107', 12054)] i have a headache
[('192.168.1.107', 12054)] sure
[NEW CONNECTION] ('192.168.1.107', 13065) connected.
[ACTIVE CONNECTIONS] 2
[NEW CONNECTION] ('192.168.1.107', 13264) connected.[ACTIVE CONNECTIONS] 3

[('192.168.1.107', 13065)] hello
[('192.168.1.107', 13264)] hello
[('192.168.1.107', 13065)] i have a headache
[('192.168.1.107', 13065)] sure
[('192.168.1.107', 13264)] i have a headache
[('192.168.1.107', 13264)] sure
[('192.168.1.107', 13065)] hi
```

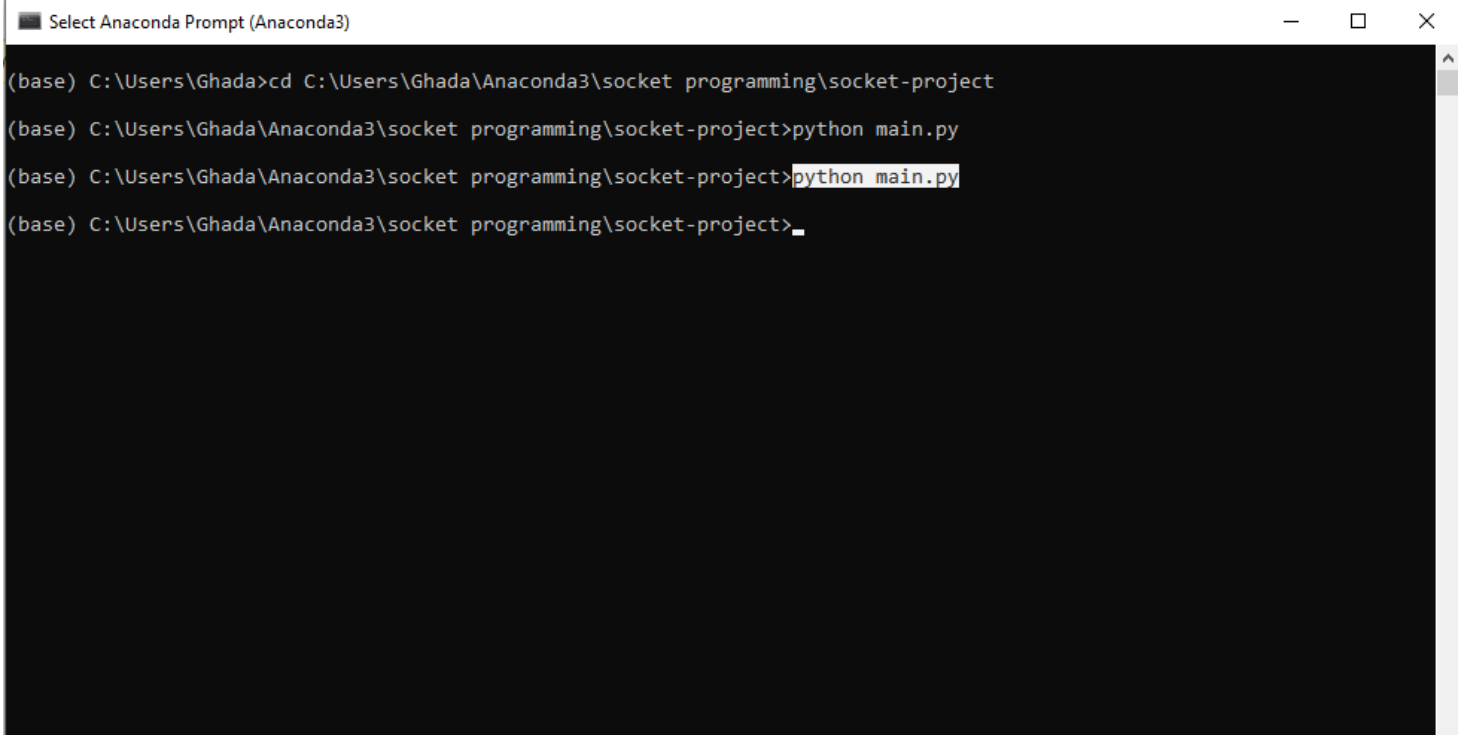
The server code terminal during running of the main.py and start chatting

How to run the Application:

- 1) When you run the server.py file on your laptop, you get your local IP address.
- 2) You should copy & paste that IP address on the main.py on the line highlighted below.

```
VCS Window Help server.py [C:\Users\Ghada\AppData\Local\Temp\server.py] - C:\Users\Ghada\Anaconda3\socket programming\socket-
programming > socket-project > main.py
main.py x
1 from PyQt5 import QtWidgets
2 from PyQt5.uic import loadUi
3 import sys
4 from chatbot import Ui_main
5 import socket
6
7
8 class ApplicationWindow(QtWidgets.QMainWindow):
9     def __init__(self):
10         QtWidgets.QMainWindow.__init__(self)
11         loadUi("home.ui", self)
12         self.window= QtWidgets.QMainWindow()
13         self.u= Ui_main()
14         self.u.setupUi(self.window)
15         self.u.textBrowser.append('<font color="#FF0000">Server: Hello! How can I help you!</font>')
16         self.HOST = "192.168.1.107"
17         self.PORT = 5050
18         self.client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
```

3) After making sure that you run the server.py file on any laptop on the same network, you should run main.py file on anaconda prompt by the commands attached below.

A screenshot of an Anaconda Prompt window. The title bar reads "Select Anaconda Prompt (Anaconda3)". The terminal shows the following commands and their outputs:

```
(base) C:\Users\Ghada>cd C:\Users\Ghada\Anaconda3\socket programming\socket-project
(base) C:\Users\Ghada\Anaconda3\socket programming\socket-project>python main.py
(base) C:\Users\Ghada\Anaconda3\socket programming\socket-project>python main.py
(base) C:\Users\Ghada\Anaconda3\socket programming\socket-project>_
```

The third line shows the command "python main.py" being typed, and the fourth line shows the cursor at the end of the command line.

All the source codes are on our GitHub repository:

<https://github.com/bioengsamars/socket-project?fbclid=IwAR39X-MUtX-GJ93lS0Fh67tJJE5qffKXDM81IRhCZWTgaEUEvxQuq9dDGsg>