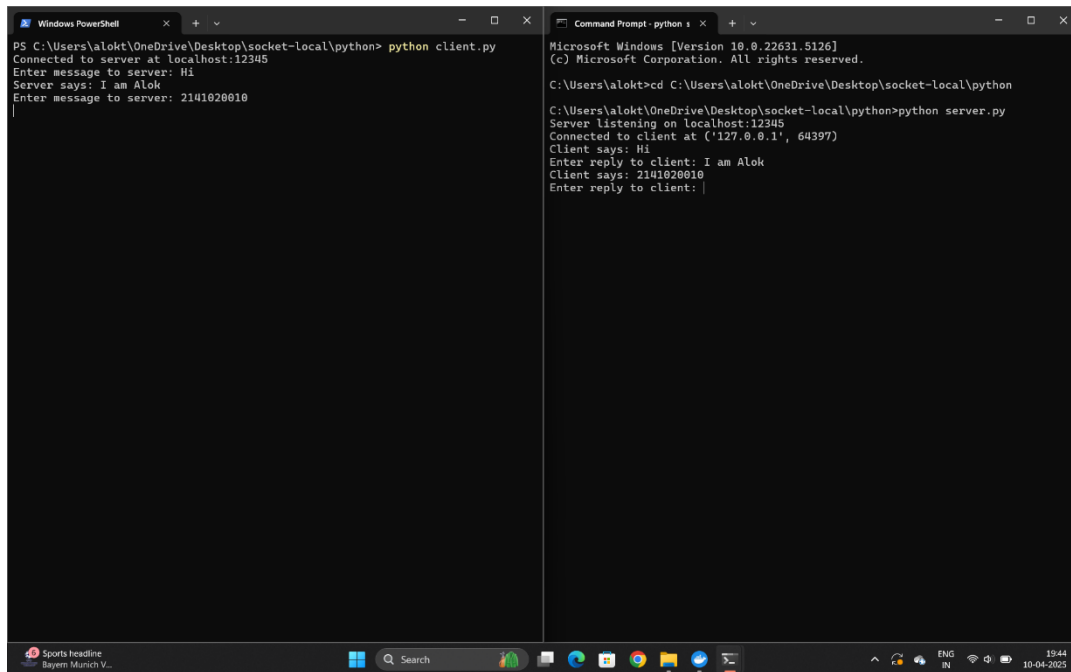


NAME - ALOK KUMAR TARINI

REGD_NO - 2141020010

CAPSTONE-4

PYTHON LOCAL CODE:



The image shows two side-by-side Windows command prompts. The left window is titled 'Windows PowerShell' and shows the execution of a Python client script. The right window is titled 'Command Prompt - python' and shows the execution of a Python server script. Both windows show the same sequence of events: the server starts listening on localhost:12345, the client connects, the client sends 'Hi', the server responds 'I am Alok', the client sends '2141020010', and the server responds with a blank line.

```
PS C:\Users\alokt\OneDrive\Desktop\socket-local\python> python client.py
Connected to server at localhost:12345
Enter message to server: Hi
Server says: I am Alok
Enter message to server: 2141020010
|

Microsoft Windows [Version 10.0.22631.5126]
(c) Microsoft Corporation. All rights reserved.

C:\Users\alokt>cd C:\Users\alokt\OneDrive\Desktop\socket-local\python

C:\Users\alokt\OneDrive\Desktop\socket-local\python>python server.py
Server listening on localhost:12345
Connected to client at ('127.0.0.1', 64397)
Client says: Hi
Enter reply to client: I am Alok
Client says: 2141020010
Enter reply to client: |
```

PYTHON DOCKER CODE:

```
Command Prompt - docker-c x + v
C:\Users\alokt>cd C:\Users\alokt\OneDrive\Desktop\socket-docker\python
C:\Users\alokt\OneDrive\Desktop\socket-docker\python>docker login
Authenticating with existing credentials... [Username: aloktarini]

Info + To login with a different account, run 'docker logout' followed by 'docker login'

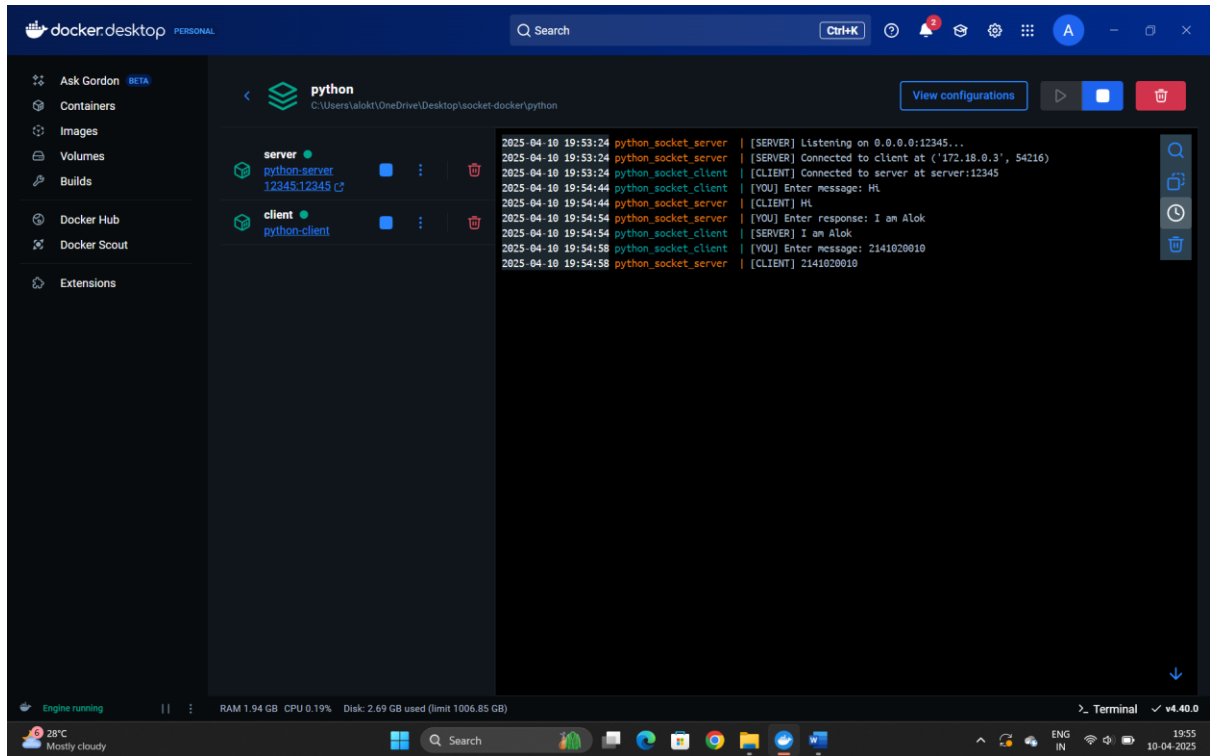
Login Succeeded

C:\Users\alokt\OneDrive\Desktop\socket-docker\python>docker-compose up --build
time="2025-04-10T19:46:16+05:30" level=warning msg="C:\\Users\\alokt\\OneDrive\\Desktop\\socket-docker\\python\\docker-compose.yml: the attribute 'versi
t will be ignored, please remove it to avoid potential confusion"
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true
[*] Building 3.9s (16/16) FINISHED
=> [server internal] load build definition from Dockerfile                                0.0s
=> => transferring dockerfile: 1168                                                    0.0s
=> [client internal] load metadata for docker.io/library/python:3.10                    3.5s
=> [server auth] library/python:pull token for registry-1.docker.io                    0.0s
=> [server internal] load .dockerignore                                                 0.0s
=> => transferring context: 25                                                         0.0s
=> [server internal] load build context                                                0.0s
=> => transferring context: 318                                                        0.0s
=> [client 1/3] FROM docker.io/library/python:3.10@sha256:e2c7fb05741c735679b26eda7dd34575151079f8c615875fbefe40 0.0s
=> CACHED [client 2/3] WORKDIR /app                                                    0.0s
=> CACHED [server 3/3] COPY server.py .                                                0.0s
=> [server] exporting to image                                                         0.0s
=> => exporting layers                                                                0.0s
=> => writing image sha256:0abf2f095d8cb9e99aa780df97a9e3438d7b0d7635e6e329a2fdcf4a7d1b885f 0.0s
=> => naming to docker.io/library/python-server                                       0.0s
=> [server] resolving provenance for metadata file                                     0.0s
=> [client internal] load build definition from Dockerfile                             0.0s
=> => transferring dockerfile: 1168                                                    0.0s
=> [client internal] load .dockerignore                                                 0.0s
=> => transferring context: 28                                                         0.0s
=> [client internal] load build context                                                0.0s
=> => transferring context: 318                                                        0.0s
=> CACHED [client 3/3] COPY client.py .                                                0.0s
=> [client] exporting to image                                                         0.0s
=> => exporting layers                                                                0.0s
=> => writing image sha256:10871fd0f7f911060bf59e01560410cff3dfe6d2008e9f18a3b85840c4ca0c50 0.0s
=> => naming to docker.io/library/python-client                                       0.0s
=> [client] resolving provenance for metadata file                                     0.0s
[*] Running 4/4
✓client Built 0.0s
✓server Built 0.0s
✓Container python_socket_server Running 0.0s
✓Container python_socket_client Running 0.0s
Attaching to python_socket_client, python_socket_server
```

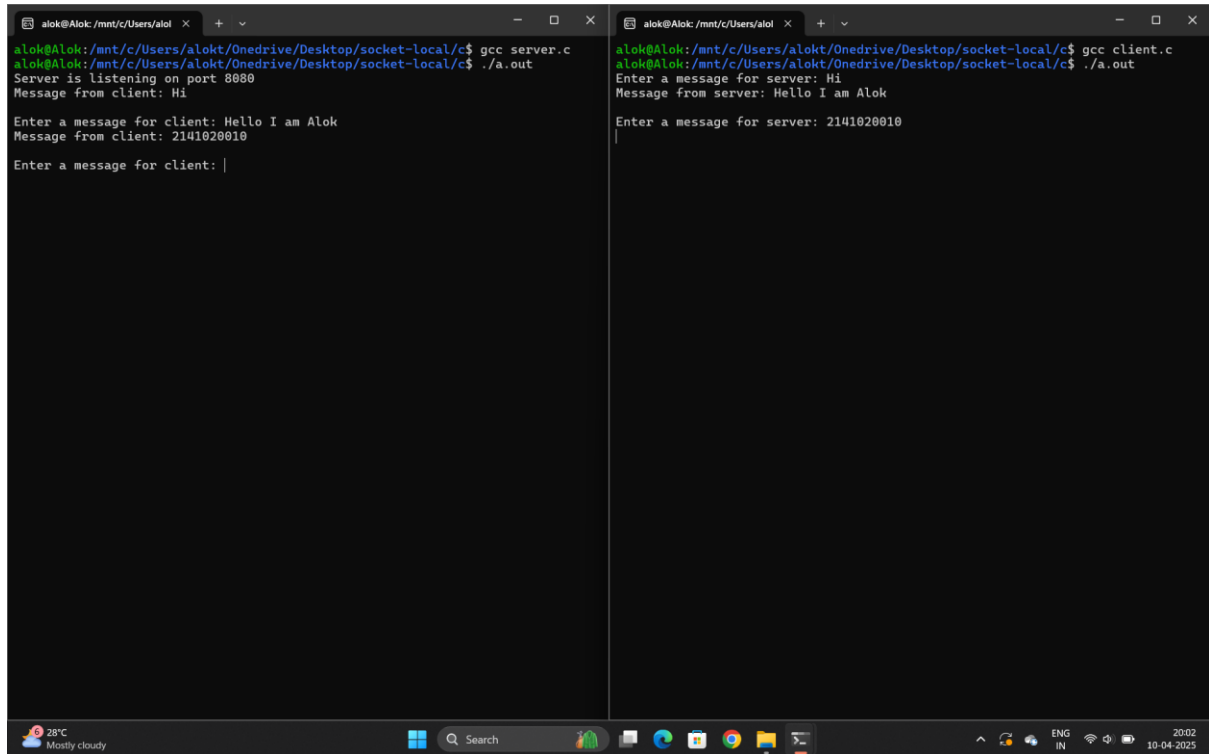
```
Windows PowerShell x + v
PS C:\Users\alokt\OneDrive\Desktop\socket-docker\python> docker attach python_socket_server
[CLIENT] Hi
[YOU] Enter response: I am Alok
[CLIENT] 2141020010
[YOU] Enter response: |

Windows PowerShell x + v
PS C:\Users\alokt\OneDrive\Desktop\socket-docker\python> docker attach python_socket_client
Hi
[SERVER] I am Alok
[YOU] Enter message: 2141020010

28°C Mostly cloudy Search 19:55 10-04-2025
```



C LOCAL CODE:



The image shows two side-by-side terminal windows from a Windows environment. Both windows have a tab labeled 'alok@Alok: /mnt/c/Users/alok'. The left window shows the execution of a server program, and the right window shows the execution of a client program.

```
alok@Alok:/mnt/c/Users/alok/Desktop/socket-local/c$ gcc server.c
alok@Alok:/mnt/c/Users/alok/Desktop/socket-local/c$ ./a.out
Server is listening on port 8080
Message from client: Hi

Enter a message for client: Hello I am Alok
Message from client: 2141020010

Enter a message for client: |
```

```
alok@Alok:/mnt/c/Users/alok/Desktop/socket-local/c$ gcc client.c
alok@Alok:/mnt/c/Users/alok/Desktop/socket-local/c$ ./a.out
Enter a message for server: Hi
Message from server: Hello I am Alok

Enter a message for server: 2141020010
|
```

The Windows taskbar at the bottom shows the date and time as 10-04-2025, 20:02, and the language as ENG IN. The system tray also displays weather information: 28°C, Mostly cloudy.

C DOCKER CODE:

```
alok@Alok: /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c$ docker-compose build
WARN[0000] /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it
to avoid potential confusion
Compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[*] Building 5.8s (22/22) FINISHED docker:default
=> [server internal] load build definition from Dockerfile 0.1s
=> => transferring dockerfile: 291B 0.0s
=> [client internal] load metadata for docker.io/library/gcc:latest 4.0s
=> [server auth] library/gcc:pull token for registry-1.docker.io 0.0s
=> [server internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [client 1/6] FROM docker.io/library/gcc:latest@sha256:95f598eea2b 0.0s
=> [server internal] load build context 0.1s
=> => transferring context: 2.93kB 0.0s
=> CACHED [client 2/6] WORKDIR /app 0.0s
=> [server 3/6] COPY server.c . 0.1s
=> [server 4/6] COPY client.c . 0.1s
=> [server 5/6] RUN gcc -o server server.c 0.5s
=> [server 6/6] RUN gcc -o client client.c 0.4s
=> [server] exporting to image 0.1s
=> => exporting layers 0.1s
=> => writing image sha256:8c3d11339c8c6113bd58687e6353aee8779692a53 0.0s
=> => naming to docker.io/library/c-server 0.0s
=> [server] resolving provenance for metadata file 0.0s
=> [client internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 291B 0.0s
=> [client internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [client internal] load build context 0.0s
=> => transferring context: 58B 0.0s
=> CACHED [client 3/6] COPY server.c . 0.0s
=> CACHED [client 4/6] COPY client.c . 0.0s
=> CACHED [client 5/6] RUN gcc -o server server.c 0.0s
=> CACHED [client 6/6] RUN gcc -o client client.c 0.0s
=> [client] exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:9e7fcc789bd837de6efbf173a8c4dc3629179d875 0.0s
=> => naming to docker.io/library/c-client 0.0s
=> [client] resolving provenance for metadata file 0.0s
[*] Building 2/2 0.0s
✓client Built 0.0s
✓server Built 0.0s
alok@Alok: /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c$ |
```

```
alok@Alok: /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c$ docker-compose run server
WARN[0000] /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
Server waiting for connection...
HI I am Alok

alok@Alok: /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c$ docker-compose run client
WARN[0000] /mnt/c/Users/alok/OneDrive/Desktop/socket-docker/c/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
[+] Creating 1/1
✓Container chat_server Created 0.5s
[+] Running 1/1
✓Container chat_server Started 0.5s
Connected to server!
Client: Hi
I am Alok
```

