TASK 1 - Report and Commands Explanation

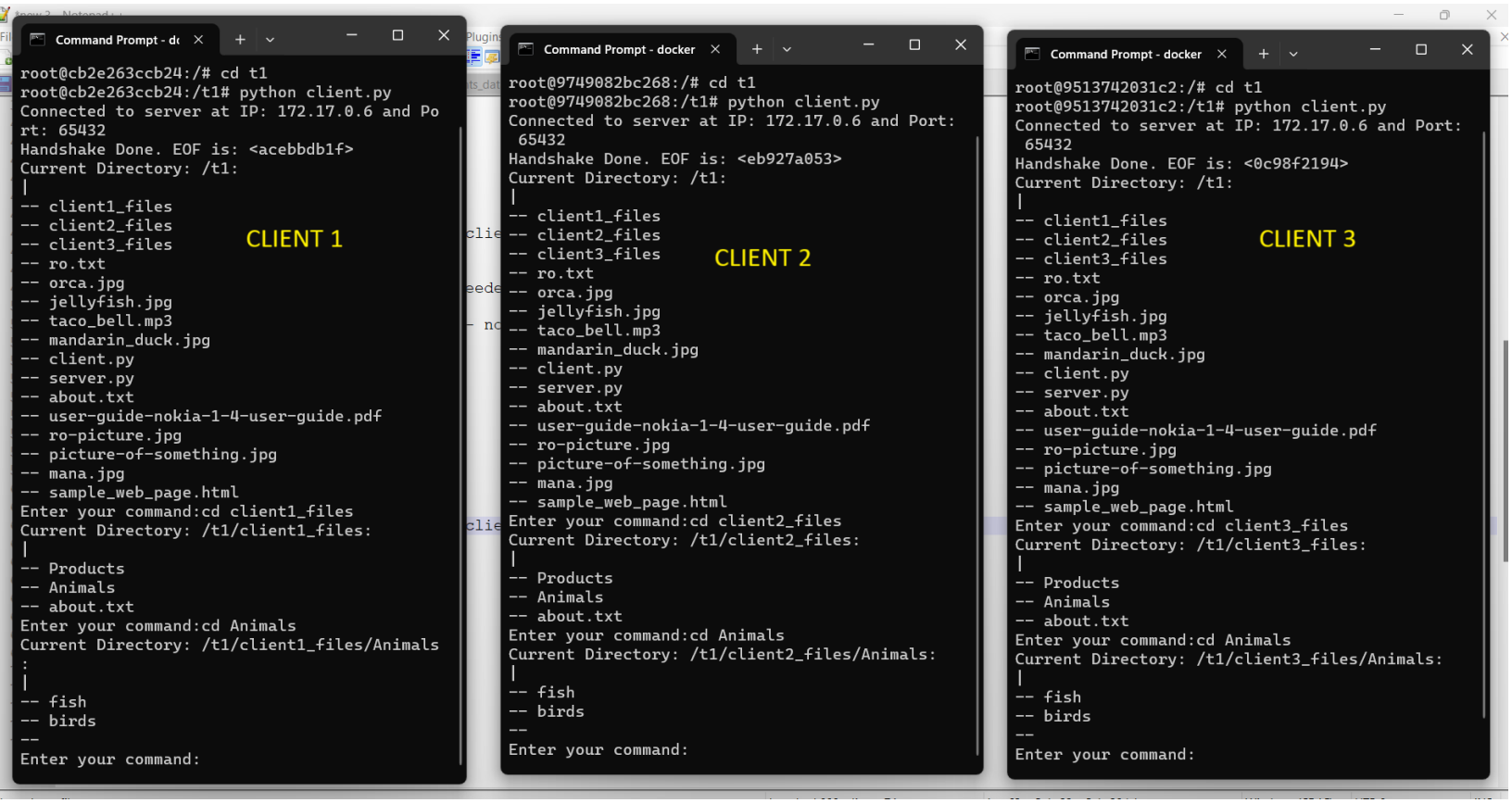
C) . Output from Server and Client Containers:

1. Server Container - Shows connection from three client containers and their respective IPs after connection.

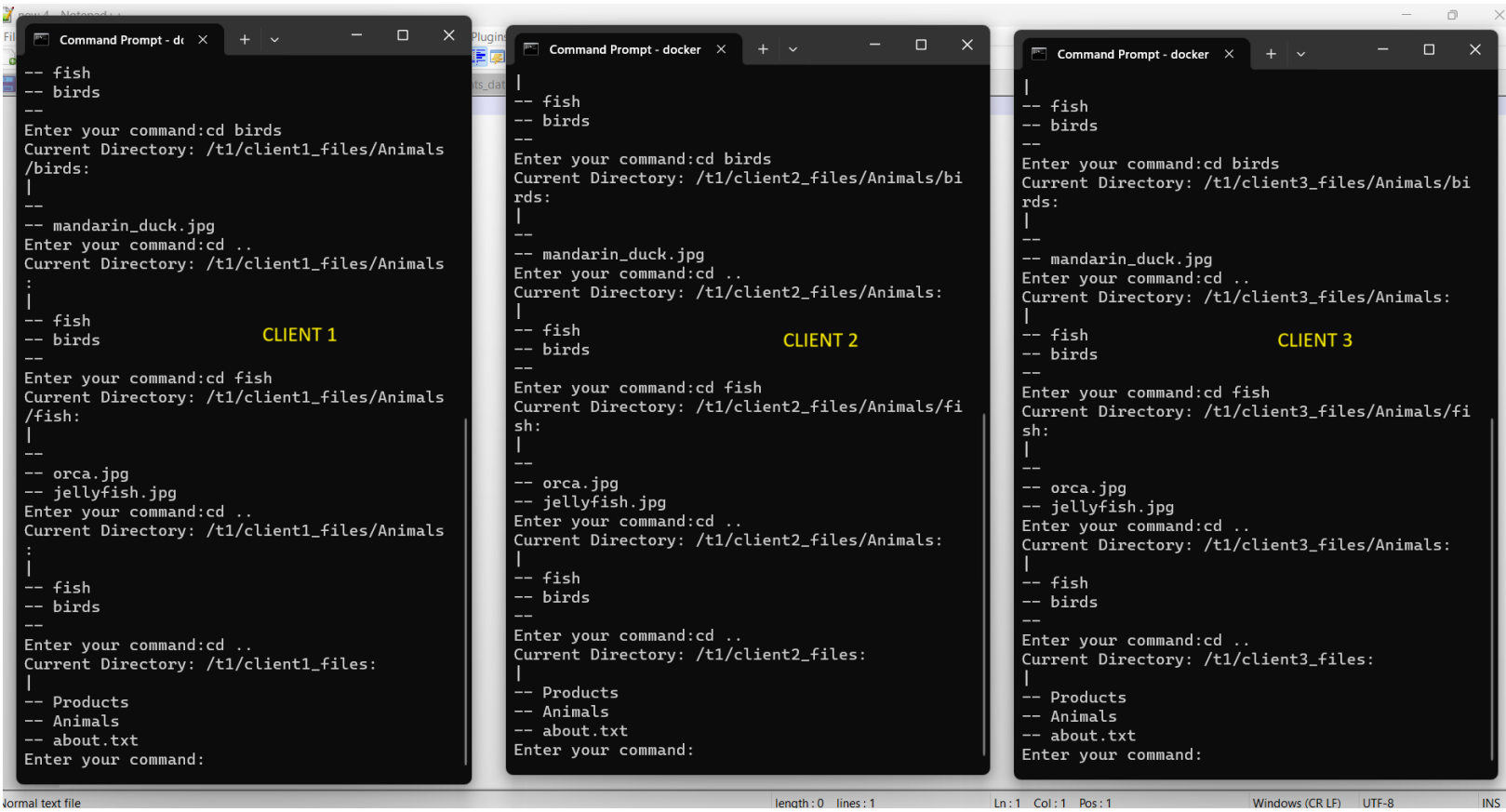
```
root@80679d58678a:/t1# python server.py
Server listening on 172.17.0.6:65432
Accepted connection from ('172.17.0.7', 48556)
Connection from :  ('172.17.0.7', 48556)
Accepted connection from ('172.17.0.8', 55812)
Connection from :  ('172.17.0.8', 55812)
Accepted connection from ('172.17.0.9', 48704)
Connection from :  ('172.17.0.9', 48704)
```

2. Client Containers - Displaying all the folder structure created

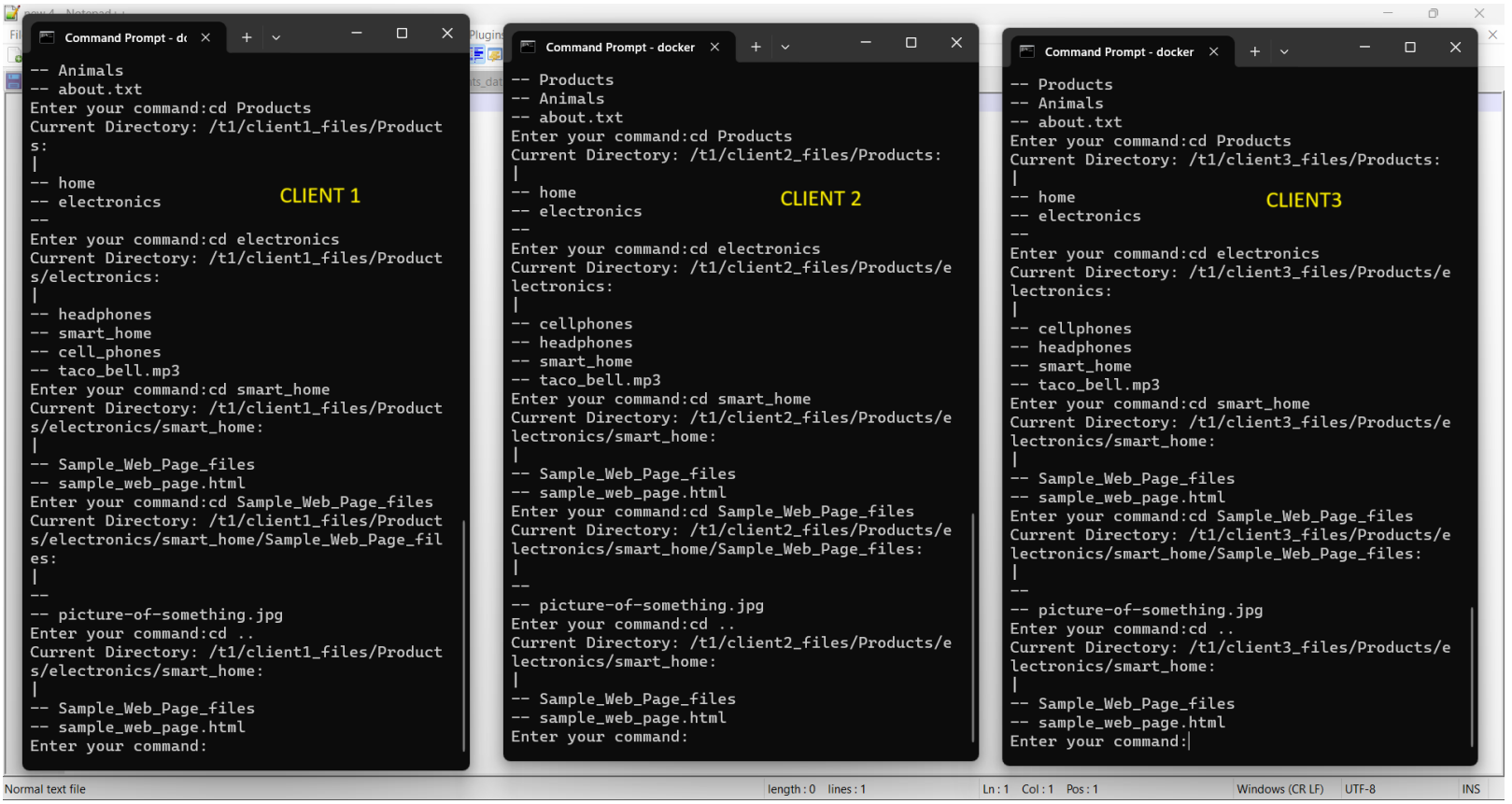
a)



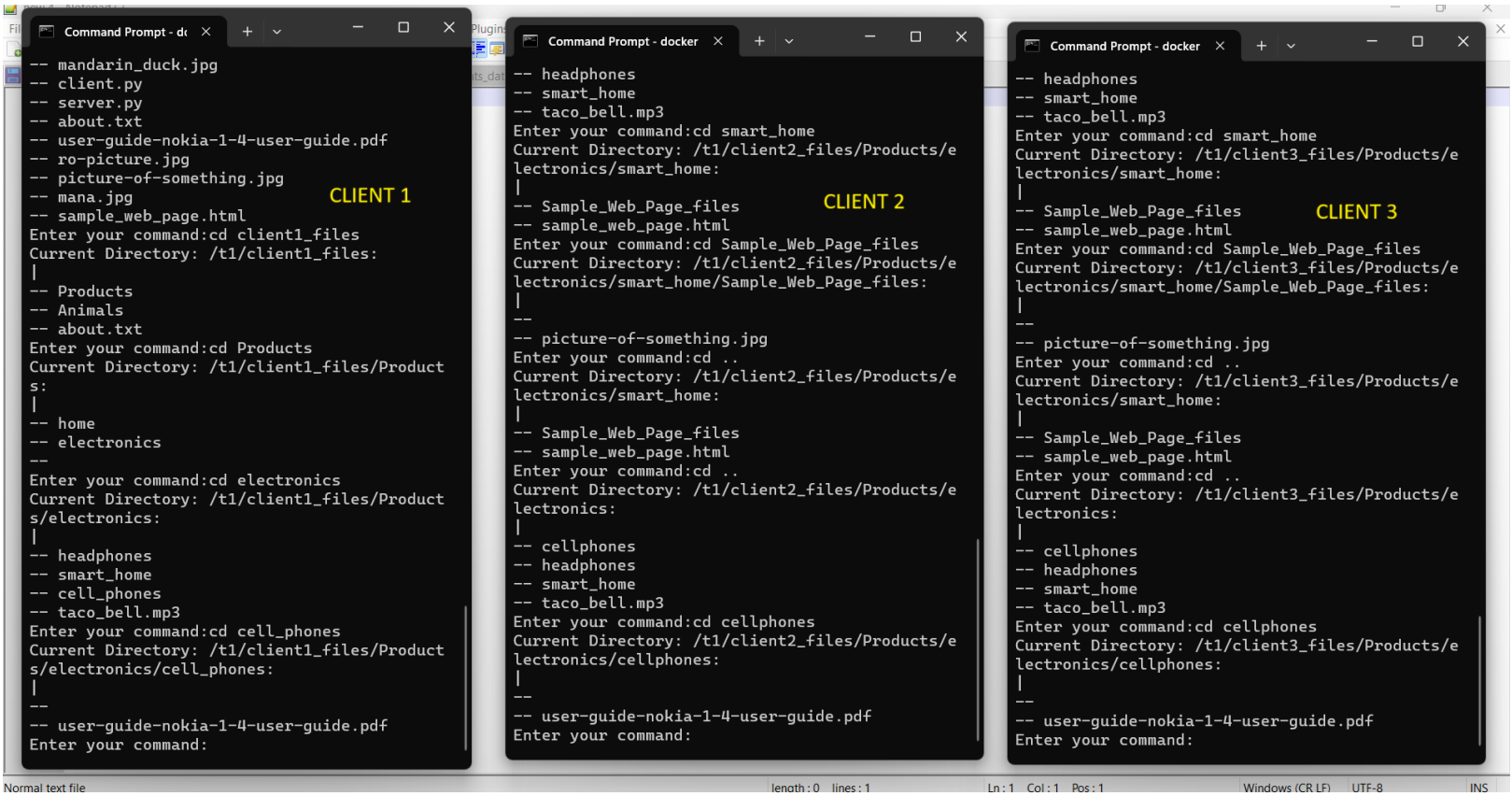
b)


-- fish
-- birds
--
Enter your command:cd birds
Current Directory: /t1/client1_files/Animals
/birds:
|
--
-- mandarin_duck.jpg
Enter your command:cd ..
Current Directory: /t1/client1_files/Animals
:
|
-- fish
-- birds
--
Enter your command:cd fish
Current Directory: /t1/client1_files/Animals
/fish:
|
--
-- orca.jpg
-- jellyfish.jpg
Enter your command:cd ..
Current Directory: /t1/client1_files/Animals
:
|
-- fish
-- birds
--
Enter your command:cd ..
Current Directory: /t1/client1_files:
|
-- Products
-- Animals
-- about.txt
Enter your command:
CLIENT 1
CLIENT 2
CLIENT 3

c)


-- Animals
-- about.txt
Enter your command:cd Products
Current Directory: /t1/client1_files/Product
s:
|
-- home
-- electronics
--
Enter your command:cd electronics
Current Directory: /t1/client1_files/Product
s/electronics:
|
-- headphones
-- smart_home
-- cell_phones
-- taco_bell.mp3
Enter your command:cd smart_home
Current Directory: /t1/client1_files/Product
s/electronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:cd Sample_Web_Page_files
Current Directory: /t1/client1_files/Product
s/electronics/smart_home/Sample_Web_Page_fil
es:
|
--
-- picture-of-something.jpg
Enter your command:cd ..
Current Directory: /t1/client1_files/Product
s/electronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:
CLIENT 1
-- Products
-- Animals
-- about.txt
Enter your command:cd Products
Current Directory: /t1/client2_files/Products:
|
-- home
-- electronics
--
Enter your command:cd electronics
Current Directory: /t1/client2_files/Products/e
lectronics:
|
-- cellphones
-- headphones
-- smart_home
-- taco_bell.mp3
Enter your command:cd smart_home
Current Directory: /t1/client2_files/Products/e
lectronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:cd Sample_Web_Page_files
Current Directory: /t1/client2_files/Products/e
lectronics/smart_home/Sample_Web_Page_files:
|
--
-- picture-of-something.jpg
Enter your command:cd ..
Current Directory: /t1/client2_files/Products/e
lectronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:
CLIENT 2
-- Products
-- Animals
-- about.txt
Enter your command:cd Products
Current Directory: /t1/client3_files/Products:
|
-- home
-- electronics
--
Enter your command:cd electronics
Current Directory: /t1/client3_files/Products/e
lectronics:
|
-- cellphones
-- headphones
-- smart_home
-- taco_bell.mp3
Enter your command:cd smart_home
Current Directory: /t1/client3_files/Products/e
lectronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:cd Sample_Web_Page_files
Current Directory: /t1/client3_files/Products/e
lectronics/smart_home/Sample_Web_Page_files:
|
--
-- picture-of-something.jpg
Enter your command:cd ..
Current Directory: /t1/client3_files/Products/e
lectronics/smart_home:
|
-- Sample_Web_Page_files
-- sample_web_page.html
Enter your command:
CLIENT3

d)



D) List of IP and Ports:

Corresponding ports and IPs can also be seen in the server output

```
root@80679d58678a:/t1# python server.py
Server listening on 172.17.0.6:65432
Accepted connection from ('172.17.0.7', 48556)
Connection from :  ('172.17.0.7', 48556)
Accepted connection from ('172.17.0.8', 55812)
Connection from :  ('172.17.0.8', 55812)
Accepted connection from ('172.17.0.9', 48704)
Connection from :  ('172.17.0.9', 48704)
```

The shared storage path is in the server container and all the three containers are communicating with the server for creating the tree structure. The paths used by client container 1,2 and 3 are t1 /client1_files, t1/client2_files , t1/client3_files respectively.

E) List of all commands used and explanation

SERVER :

1. docker pull ozxx33/fileserver-base
   -> gets the base image for the assignment in order to build containers on top of it

2. docker run -p 65432:65432 -it --name server_container_t1 ozxx33/fileserver-base
   -> creates and starts a container with the name server_container_t1. It also maps the host port 65432 with the container's post to the public
   .
3. docker cp "C:\Users\mihir\Downloads\Docker_T1" server_container_t1:/t1
   -> Copies the files from the specified folder inside the container in the location t1

4. docker start server_container_t1
   -> Starts the specified container

5. docker exec -it server_container_t1 bash
   ->Runs the specified container in interactive mode with bash

6. docker commit server_container_t1 client_server_task_t1
   -> Creates a new intermediate image client_server_task_t1

7. docker images
   -> Displays all available images

8. docker exec -it server_container_t1 bash
   -> Runs the new container with bash

9. cd t1
   -> Change directory to the folder with code files

10. Python sever.py
    -> Run the server file with socket

CLIENT CONTAINER 1

1. docker run -it --name client1_container_t1 client_server_task_t1
   ->Runs the specified container with name client1_container_t1 in interactive mode with bash

2. cd t1
   -> Change directory with code files

3. python client.py
   -> Run the client socket for connecting with server

4. mkdir client1_files
   -> Create a new directory for operations at server side

5. cd client1_files
   -> change directory to the new folder at server side

CLIENT CONTAINER 2

1. docker run -it --name client2_container_t1 client_server_task_t1 -- Client 2
   >Runs the specified container with name client2_container_t1 in interactive mode with bash

2. cd t1
   -> Change directory with code files

3. python client.py
   -> Run the client socket for connecting with server

4. mkdir client2_files
   ->Create a new directory for operations at server side

5. cd client2_files
   -> change directory to the new folder at server side

CLIENT CONTAINER 3

1. docker run -it --name client3_container_t1 client_server_task_t1
   >Runs the specified container with name client3_container_t1 in interactive mode with bash

2. python client.py
   -> Run the client socket for connecting with server

3. mkdir client3_files
   ->Create a new directory for operations at server side

4. cd client3_files
   -> change directory to the new folder at server side

F) Yes I committed an intermediate image after adding all the necessary code files to the container as it will be easy to load new client containers directly from it with all the needed code files.