

# **Network Programming Lab**

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ROLL NO :22

S6 CSE

## **Experiment 6**

### **AIM**

Develop concurrent file server which will provide the file requested by client if it exists. If not, the server sends an appropriate message to the client. Server should also send its process ID (PID) to clients for display along with file or the message.

### **THEORY**

A file server is a central server in a computer network that provides file systems or at least parts of a file system to connected clients. File servers therefore offer users a central storage place for files on internal data media, which is accessible to all authorized clients. Here, the server administrator defines strict rules regarding which users have which access rights: For instance, the configuration or file authorizations of the respective file system enable the admin to set which files can be seen and opened by a certain user or user group, and whether data can only be viewed or also added, edited, or deleted.

With file servers connected to the internet and configured accordingly, users cannot only access the files via the local network but also benefit from remote access. This enables files to be accessed and saved on the file server even when users are on the go. All modern operating systems such as Windows, Linux, or macOS can be used on a file server, although the devices available in the network need to be compatible with the operating system. But file servers are not only used for file storage and management. They are also often used as a

repository for programs that have to be accessible to multiple network participants, and as a backup server.

## **HOW TO RUN**

Create two folders Server and Client-Server

Create some files under server and add their name to list files in Server.java.

Open terminal for Server and one or more for Clients.

Server should be setup first and after that Client.

Run Server application

```
$javac Server.java
```

```
$javac Server
```

Server is now started and is waiting for Client

Run Client application in each of the terminals

```
$javac Client.java
```

```
$javac Client-Server
```

now connection is established

For authorization first enter the client id (client1, client2 ....)

Client request files to Server. If presents file is sent to Client directory with Process id.

Else message "File not found" is obtained.

Enter Exit in Client to finish communication

## **SCREENSHOTS**

**server:**

```
C:\Windows\System32\cmd.exe - java Server.java
Microsoft Windows [Version 10.0.18363.1316]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Deshima\Desktop\network\exp6>javac Server.java

C:\Users\Deshima\Desktop\network\exp6>java Server.java
Client 1 is connected : Socket[addr=/127.0.0.1,port=50503,localport=5056]
Assigning new thread for this client
client1 validated
Client 1 requests: aa.txt
Process 1 completed. File tranfered successfully.
Client 1 requests: bb.txt
The file is not found. Process 1 not completed.
Client 1 requests: a.png
Process 1 completed. File tranfered successfully.
Client 1 Socket[addr=/127.0.0.1,port=50503,localport=5056] sends exit...
Closing this connection.
Connection closed
Client 2 is connected : Socket[addr=/127.0.0.1,port=50523,localport=5056]
Assigning new thread for this client
client2 validated
Client 2 requests: c.txt
The file is not found. Process 2 not completed.
Client 2 requests: a.png
Process 2 completed. File tranfered successfully.
Client 3 is connected : Socket[addr=/127.0.0.1,port=50533,localport=5056]
Assigning new thread for this client
client3 validated
Client 3 requests: aa.txt
Process 3 completed. File tranfered successfully.
```

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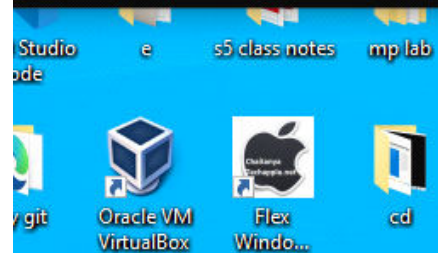


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```
Process 3 completed. File tranfered successfully.  
Client 3 requests: a.txt  
The file is not found. Process 3 not completed.  
Client 3 Socket[addr=/127.0.0.1,port=50533,localport=5056] sends exit...  
Closing this connection.  
Connection closed  
Client 2 Socket[addr=/127.0.0.1,port=50523,localport=5056] sends exit...  
Closing this connection.  
Connection closed
```



**client1:**

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.1316]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Deshima\Desktop\network\exp6>javac Client.java

C:\Users\Deshima\Desktop\network\exp6>java Client.java
Enter ID :
client1
client1 Validated
Enter filename : aa.txt
process_id : 1, file_name : aa.txt
Transfer Complete
Enter filename : bb.txt
The file is not found.
Enter filename : a.png
process_id : 1, file_name : a.png
Transfer Complete
Enter filename : Exit
Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=50503]
Connection closed

C:\Users\Deshima\Desktop\network\exp6>
```

**client2:**



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.1316]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Deshima\Desktop\network\exp6>javac Client.java

C:\Users\Deshima\Desktop\network\exp6>javac Client.java

C:\Users\Deshima\Desktop\network\exp6>java client.java
Enter ID :
client2
client2 Validated
Enter filename : c.txt
The file is not found.
Enter filename : a.png
process_id : 2, file_name : a.png
Transfer Complete
Enter filename : Exit
Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=50523]
Connection closed

C:\Users\Deshima\Desktop\network\exp6>_
```

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**client3:**

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.1316]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Deshima\Desktop\network\exp6>javac Client.java

C:\Users\Deshima\Desktop\network\exp6>java Client.java
Enter ID :
client3
client3 Validated
Enter filename : aa.txt
process_id : 3, file_name : aa.txt
Transfer Complete
Enter filename : a.txt
The file is not found.
Enter filename : Exit
Closing this connection : Socket[addr=localhost/127.0.0.1,port=5056,localport=50533]
Connection closed

C:\Users\Deshima\Desktop\network\exp6>_
```

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