AJAY S RAM

ROLL NO 3
S6 CSE

EXPERIMENT 6 :

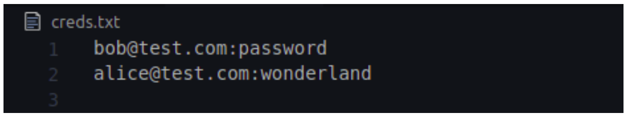
IMPLEMENT CONCURRENT FILE SERVER

FILE SERVER:

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.

Note : For authentication, server expects a **creds.txt** file in the directory of java file. The structure of file contents is

email id:password



creds.txt

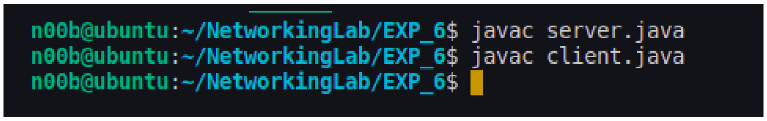
```
bob@test.com:password
alice@test.com:wonderland
```

PROGRAM

Both client and server programs are written in Java.

1. Compile the java code :

   javac client.java
   javac server.java

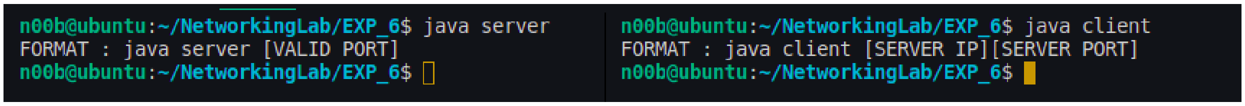


```
n00b@ubuntu:~/NetworkingLab/EXP_6$ javac server.java
n00b@ubuntu:~/NetworkingLab/EXP_6$ javac client.java
n00b@ubuntu:~/NetworkingLab/EXP_6$ 
```

2. Run the program

   Note : Both programs take command line arguments. Server expects a valid port number and the client expects both server ip and the port it listens on

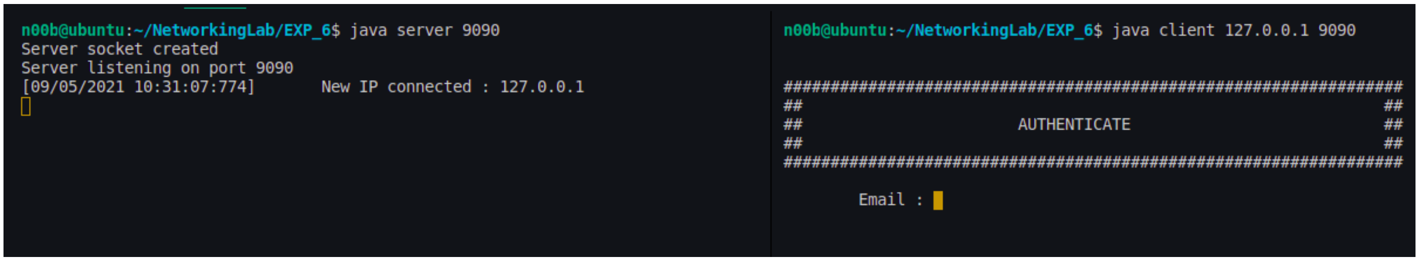
   java server [VALID PORT]
   java client [SERVER IP] [SERVER PORT]



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java server
FORMAT : java server [VALID PORT]
n00b@ubuntu:~/NetworkingLab/EXP_6$
```

```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client
FORMAT : java client [SERVER IP][SERVER PORT]
n00b@ubuntu:~/NetworkingLab/EXP_6$
```

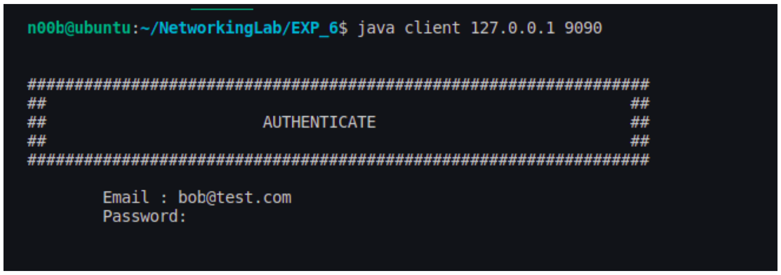
Getting started



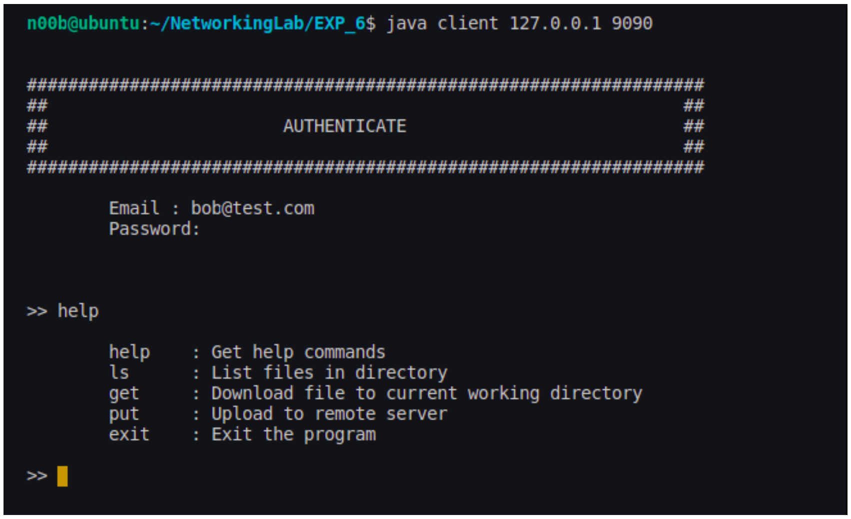
```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java server 9090
Server socket created
Server listening on port 9090
[09/05/2021 10:31:07:774]       New IP connected : 127.0.0.1
```

```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090

##################################################################
##                                                              ##
##                        AUTHENTICATE                          ##
##                                                              ##
##################################################################

        Email :
```

Authentication is carried out at server side and the user can use the client only if logged in, otherwise the client just exits on execution

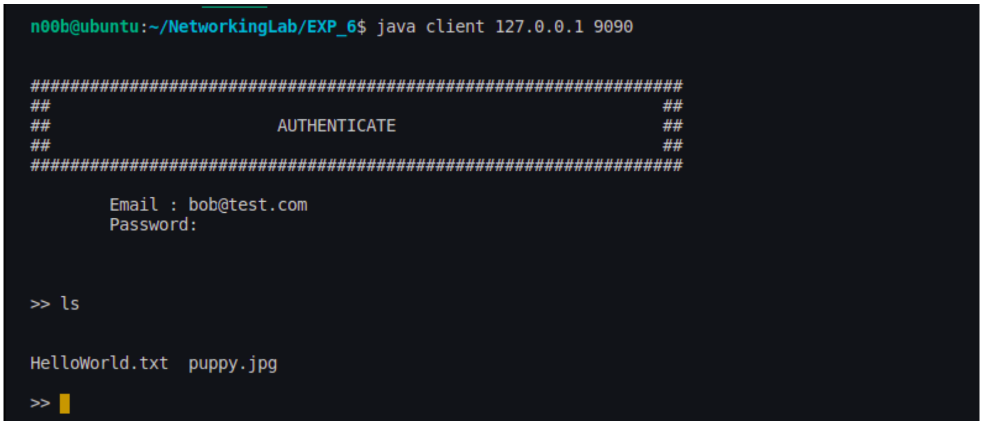


```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090

##################################################################
##                                                              ##
##                        AUTHENTICATE                          ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:
```



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090

##################################################################
##                                                              ##
##                        AUTHENTICATE                          ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:


>> help

        help    : Get help commands
        ls      : List files in directory
        get     : Download file to current working directory
        put     : Upload to remote server
        exit    : Exit the program

>>
```

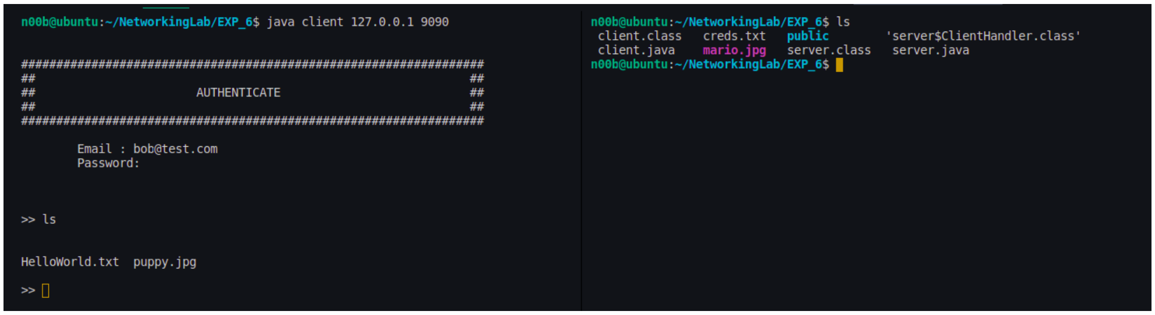
1. List files
   By default all files are stored in the public directory



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090


##################################################################
##                                                              ##
##                         AUTHENTICATE                         ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:


>> ls


HelloWorld.txt  puppy.jpg

>> 
```

2. Download file from server

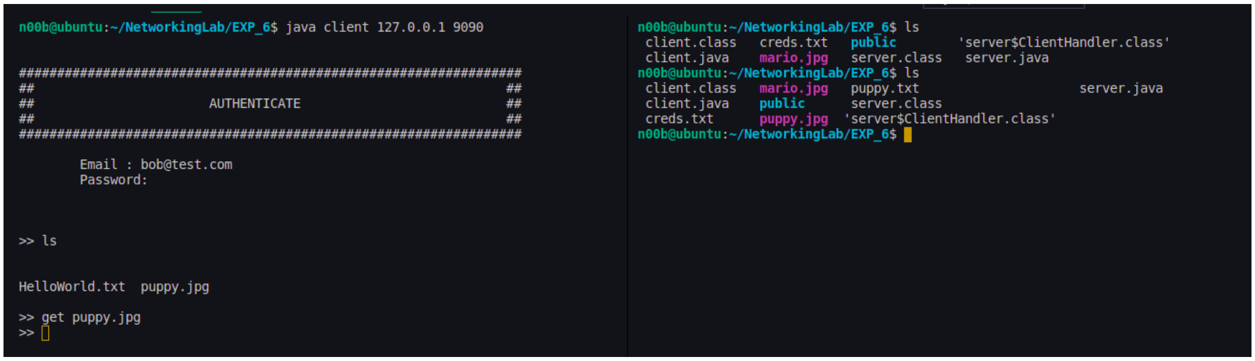
   Lets view current directory first



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090


##################################################################
##                                                              ##
##                         AUTHENTICATE                         ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:


>> ls


HelloWorld.txt  puppy.jpg

>> 
```

```
n00b@ubuntu:~/NetworkingLab/EXP_6$ ls
 client.class   creds.txt   public        'server$ClientHandler.class'
 client.java    mario.jpg   server.class   server.java
n00b@ubuntu:~/NetworkingLab/EXP_6$ 
```

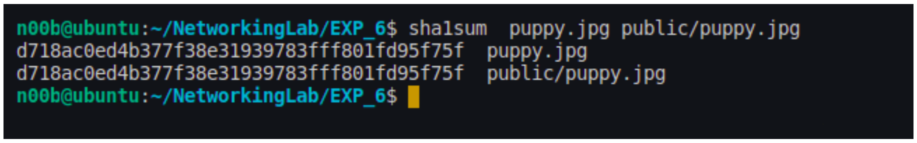
   Downloading puppy.jpg



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090


##################################################################
##                                                              ##
##                         AUTHENTICATE                         ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:


>> ls


HelloWorld.txt  puppy.jpg

>> get puppy.jpg
>> 
```

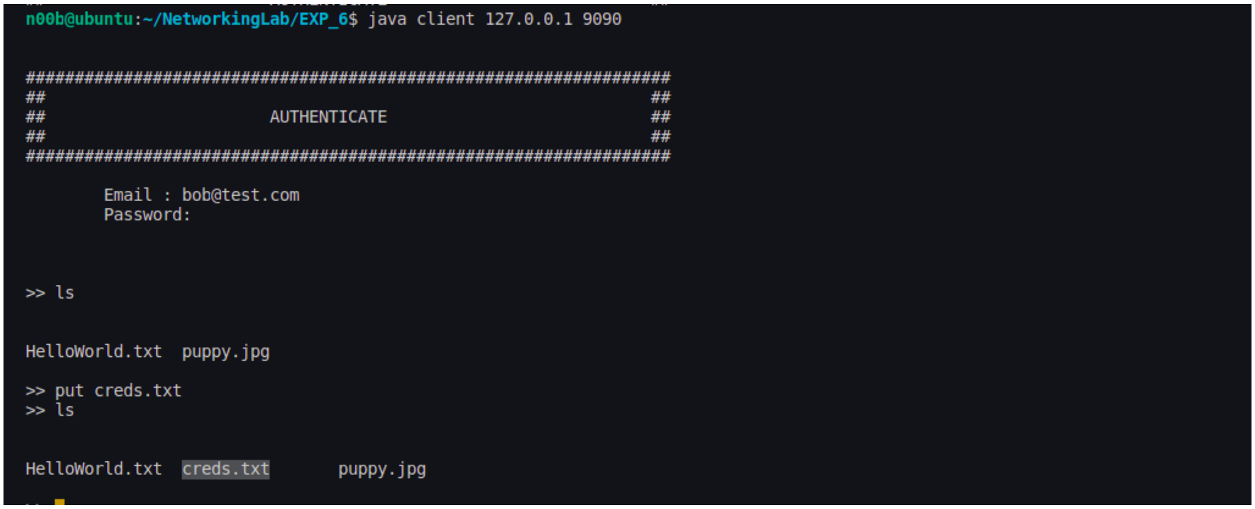
```
n00b@ubuntu:~/NetworkingLab/EXP_6$ ls
 client.class   creds.txt   public        'server$ClientHandler.class'
 client.java    mario.jpg   server.class   server.java
n00b@ubuntu:~/NetworkingLab/EXP_6$ ls
 client.class   mario.jpg   puppy.txt                        server.java
 client.java    public      server.class
 creds.txt      puppy.jpg  'server$ClientHandler.class'
n00b@ubuntu:~/NetworkingLab/EXP_6$ 
```

   Verifying the downloaded file with that in server



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ sha1sum  puppy.jpg public/puppy.jpg
d718ac0ed4b377f38e31939783fff801fd95f75f  puppy.jpg
d718ac0ed4b377f38e31939783fff801fd95f75f  public/puppy.jpg
n00b@ubuntu:~/NetworkingLab/EXP_6$ 
```

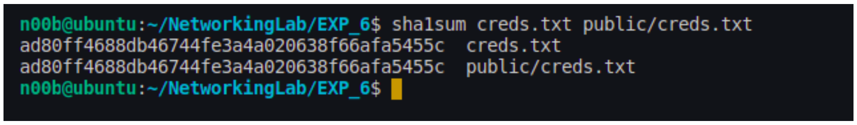
3. Upload



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ java client 127.0.0.1 9090


##################################################################
##                                                              ##
##                       AUTHENTICATE                           ##
##                                                              ##
##################################################################

        Email : bob@test.com
        Password:



>> ls


HelloWorld.txt  puppy.jpg

>> put creds.txt
>> ls


HelloWorld.txt  creds.txt       puppy.jpg
```

creds.txt is now uploaded

Verifying the files



```
n00b@ubuntu:~/NetworkingLab/EXP_6$ sha1sum creds.txt public/creds.txt
ad80ff4688db46744fe3a4a020638f66afa5455c  creds.txt
ad80ff4688db46744fe3a4a020638f66afa5455c  public/creds.txt
n00b@ubuntu:~/NetworkingLab/EXP_6$
```