Network Programming Lab

Mid-Term Lab Exam

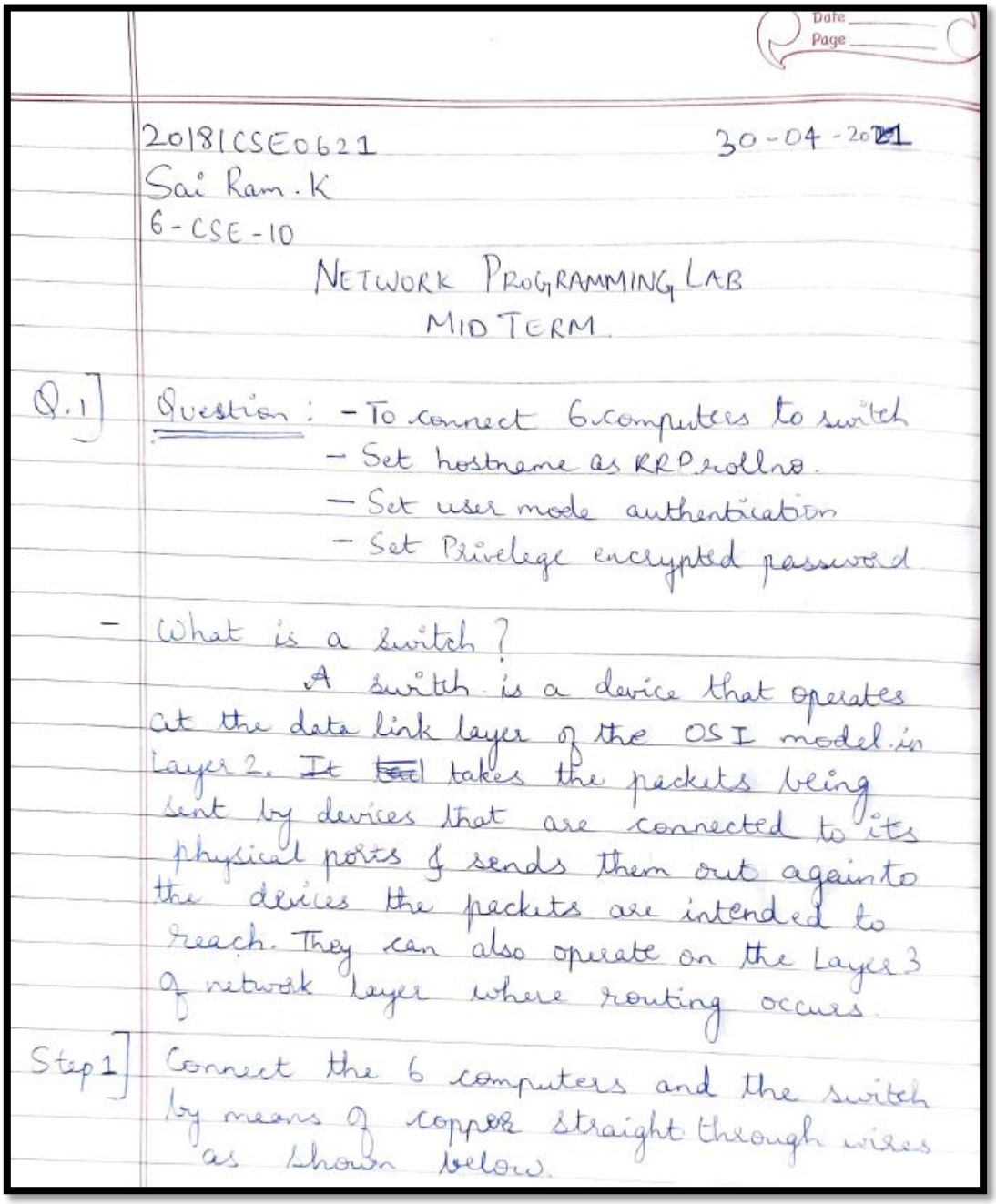
20181CSE0621

Sai Ram. K

6-CSE-10 | 30-04-2021

Question 1

Step 1:



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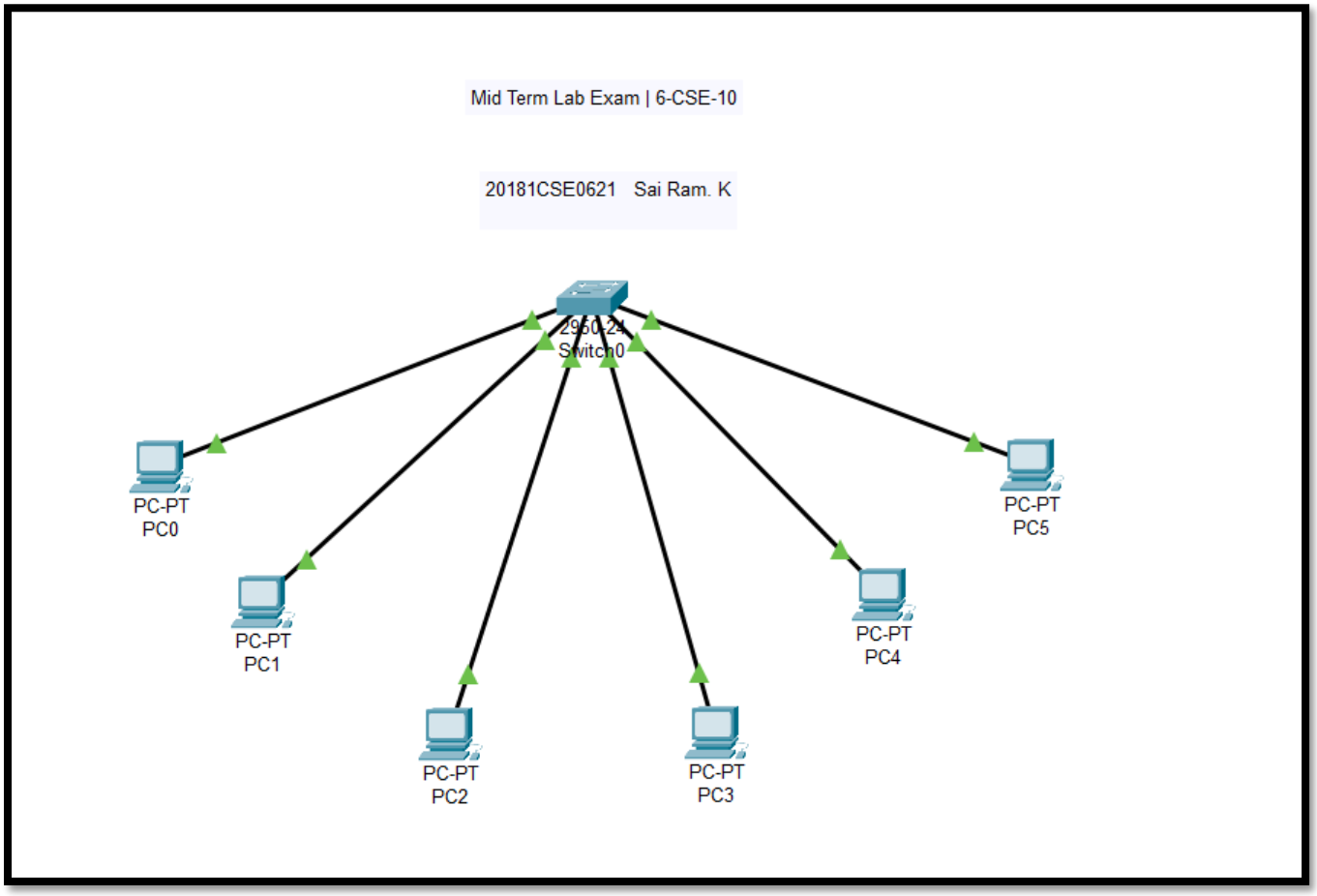
NETWORK PROGRAMMING LAB
MID TERM.

Q.1] Question : - To connect 6 computers to switch
- Set hostname as RRP.rollno.
- Set user mode authentication
- Set Privilege encrypted password

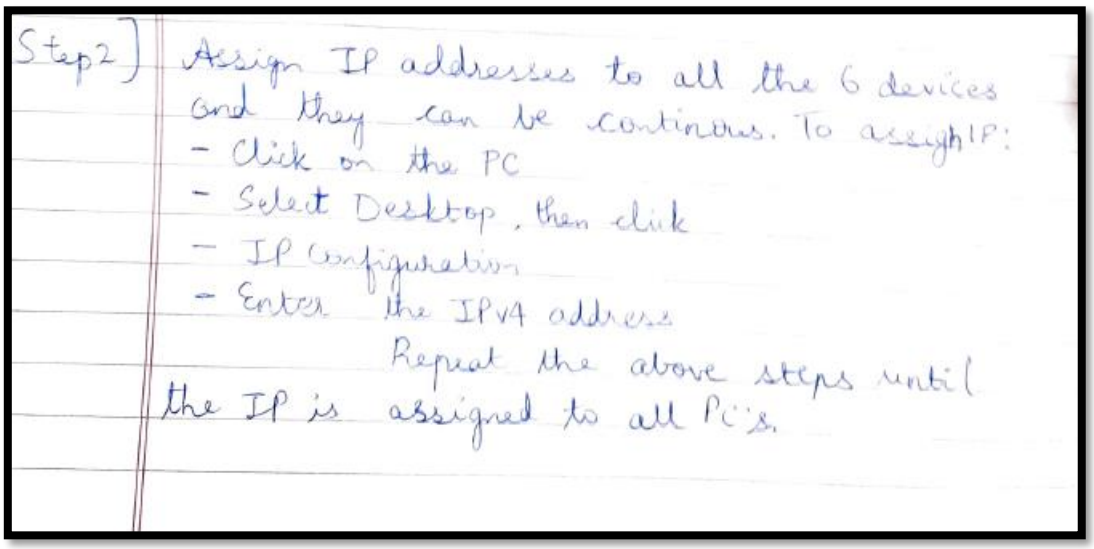
- What is a switch ?

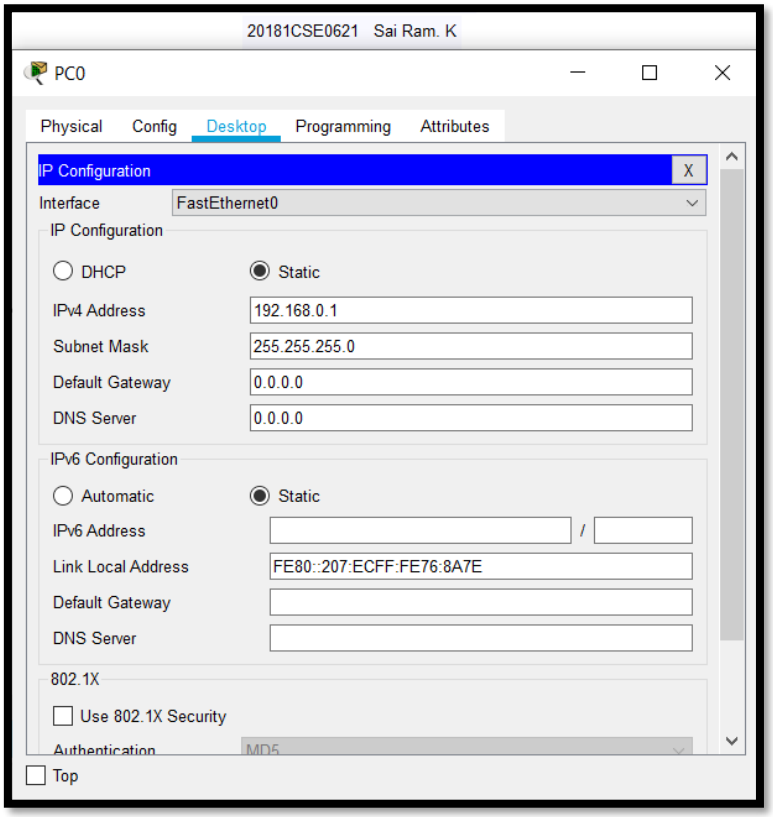
A switch is a device that operates at the data link layer of the OSI model in layer 2. It takes the packets being sent by devices that are connected to its physical ports & sends them out again to the devices the packets are intended to reach. They can also operate on the Layer 3 of network layer where routing occurs.

Step 1] Connect the 6 computers and the switch by means of copper straight through wires as shown below.

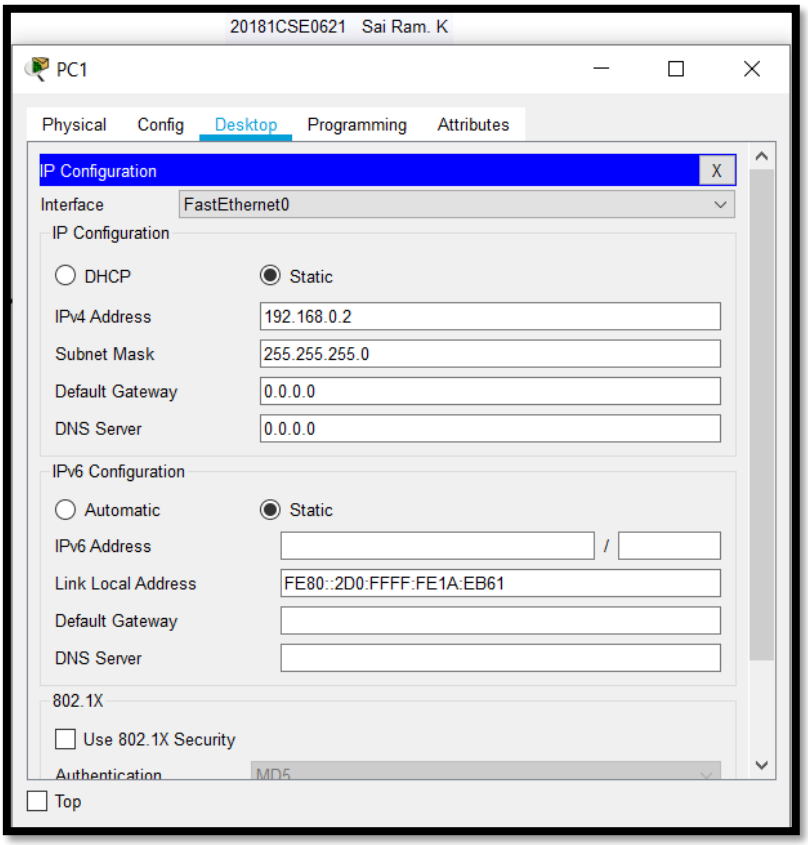

Mid Term Lab Exam | 6-CSE-10
20181CSE0621 Sai Ram. K
2950-24
Switch0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
PC-PT
PC3
PC-PT
PC4
PC-PT
PC5

Step 2:

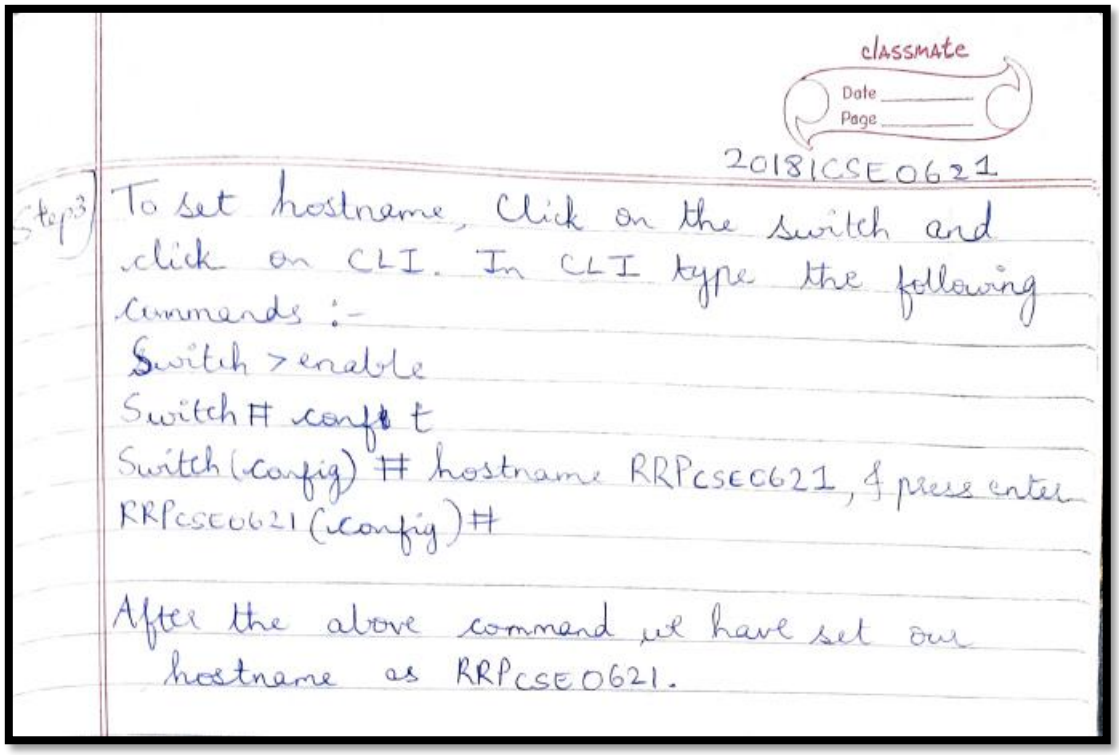

Step 2] Assign IP addresses to all the 6 devices and they can be continous. To assign IP:
- Click on the PC
- Select Desktop, then click
- IP Configuration
- Enter the IPV4 address
Repeat the above steps until the IP is assigned to all PC's.



NOTE : Similarly Assign IP for all the PC's.



Step 3:



classmate
Date
Page
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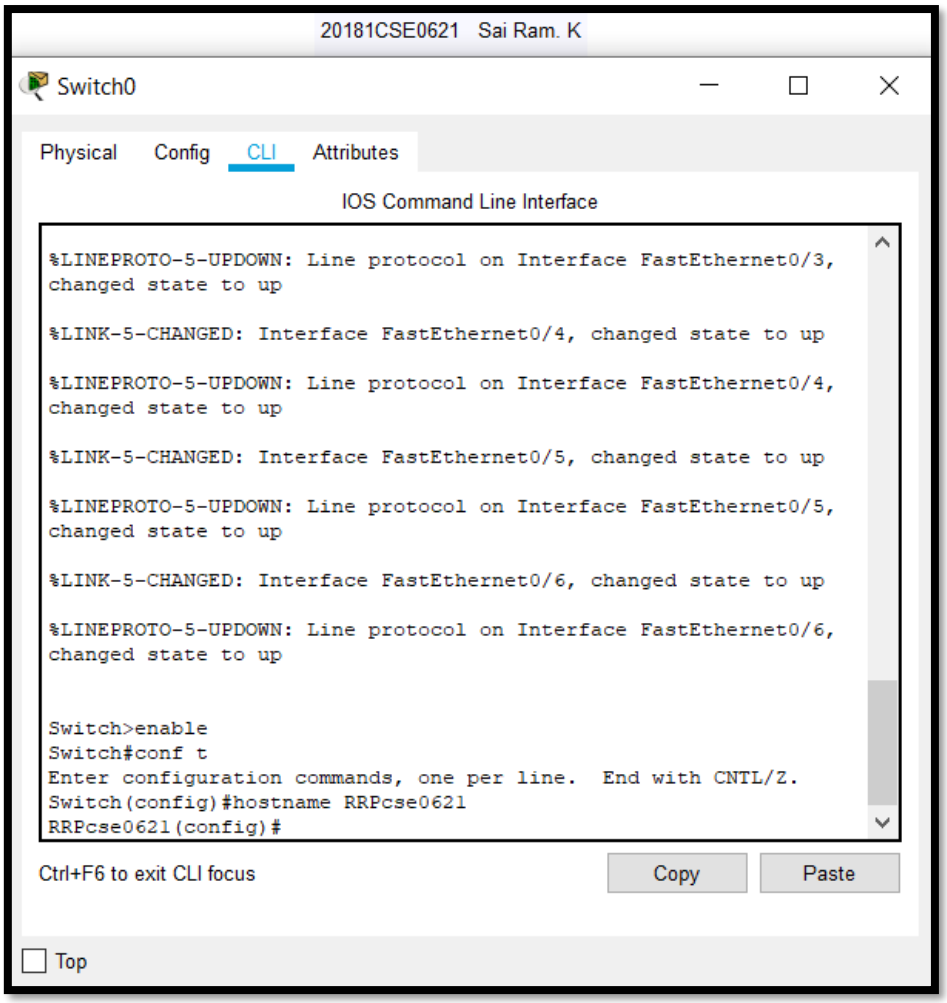
step3 To set hostname, Click on the switch and click on CLI. In CLI type the following commands :-

Switch > enable
Switch # conf t
Switch (config) # hostname RRPcse0621, & press enter
RRPcse0621 (config) #

After the above command we have set our hostname as RRPcse0621.



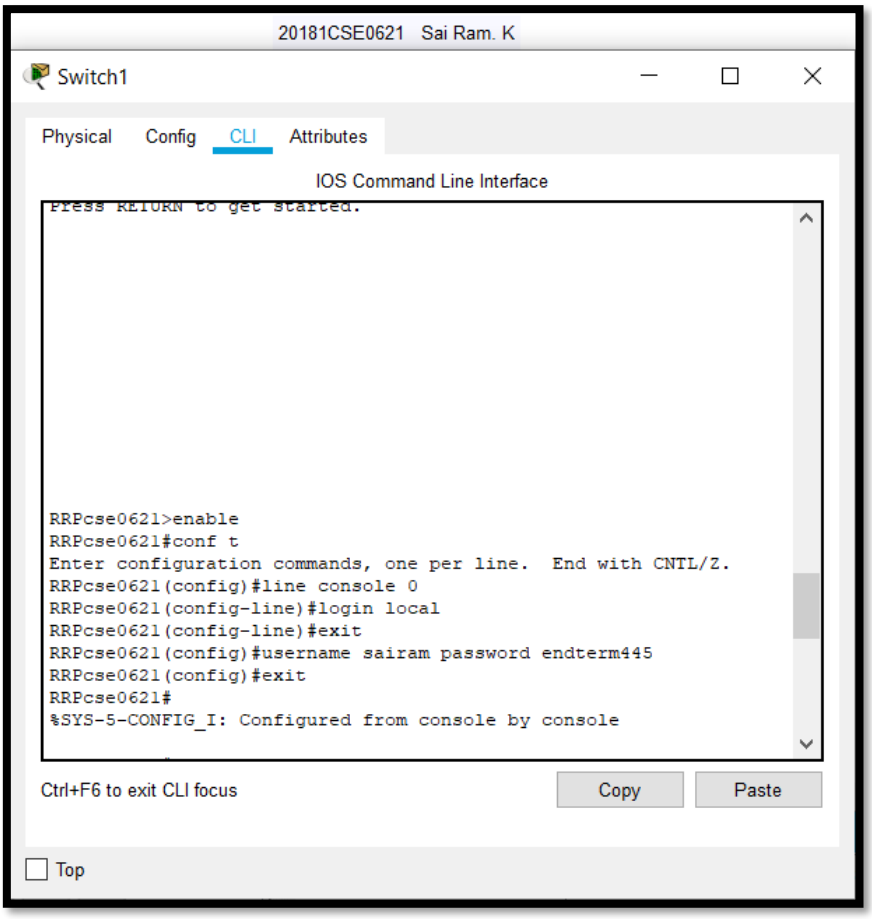
Step 4:

Step 4: To set user authentication, Click on the switch and click on CLI. In CLI type the following:-

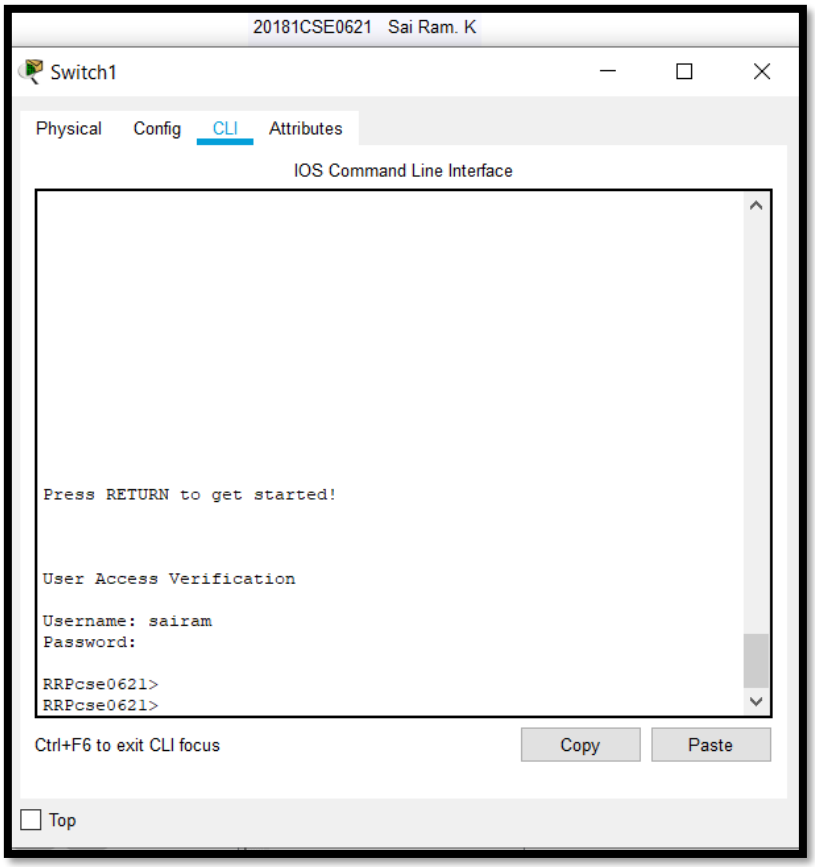
```
RRPCSE0621 > enable
RRPCSE0621# conf t
RRPCSE0621(config)# line console 0
RRPCSE0621(config-line)# login local
RRPCSE0621(config-line)# exit
RRPCSE0621(config)# username sairam password endterm445
RRPCSE0621(config)# exit
```

To verify, In CLI type:

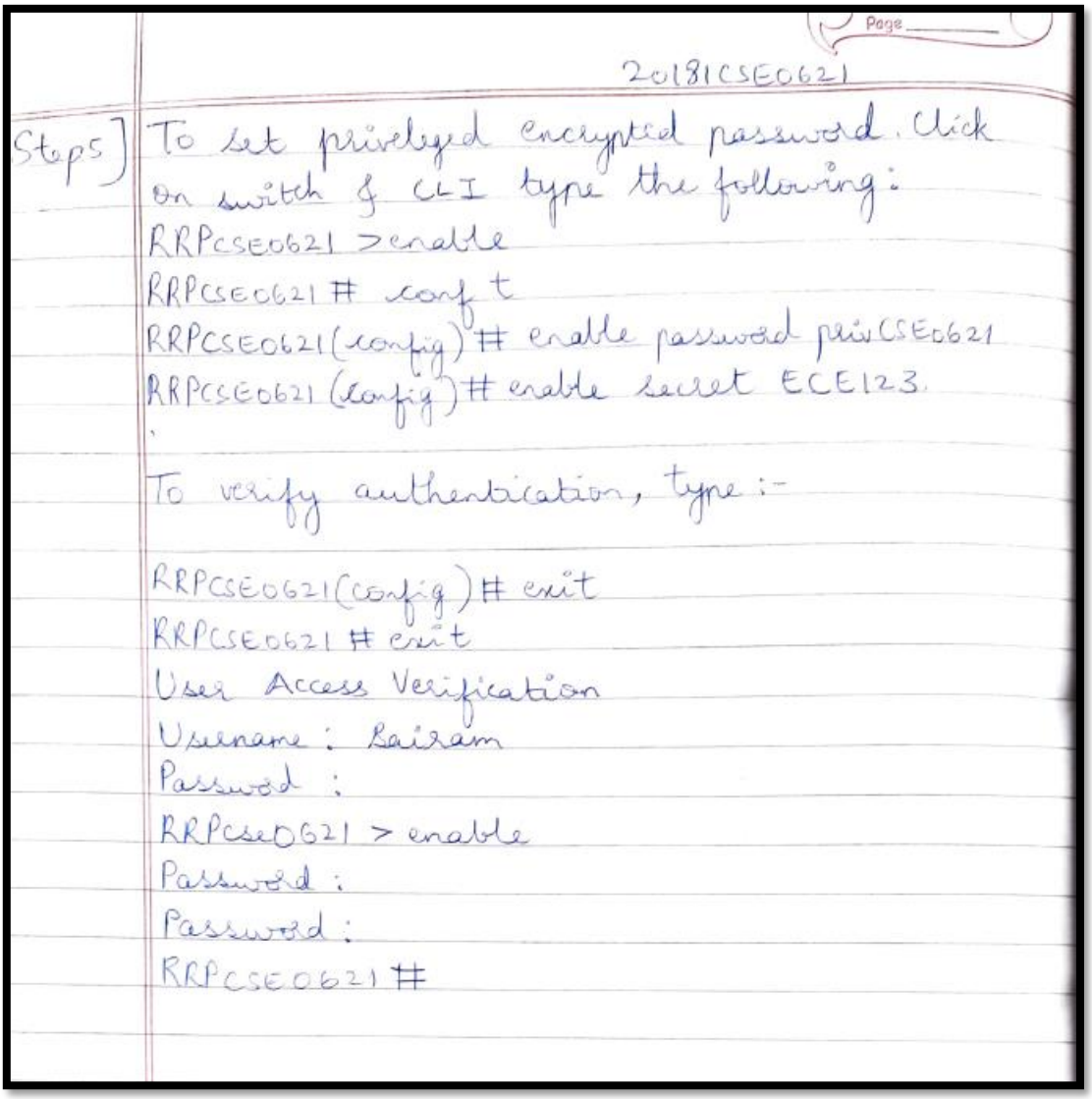
```
RRPCSE0621(config)# exit
RRPCSE0621 # exit

User Access Verification
Username : sairam
Password :
RRPCSE0621>
```



Verifying user authentication



Step 5:



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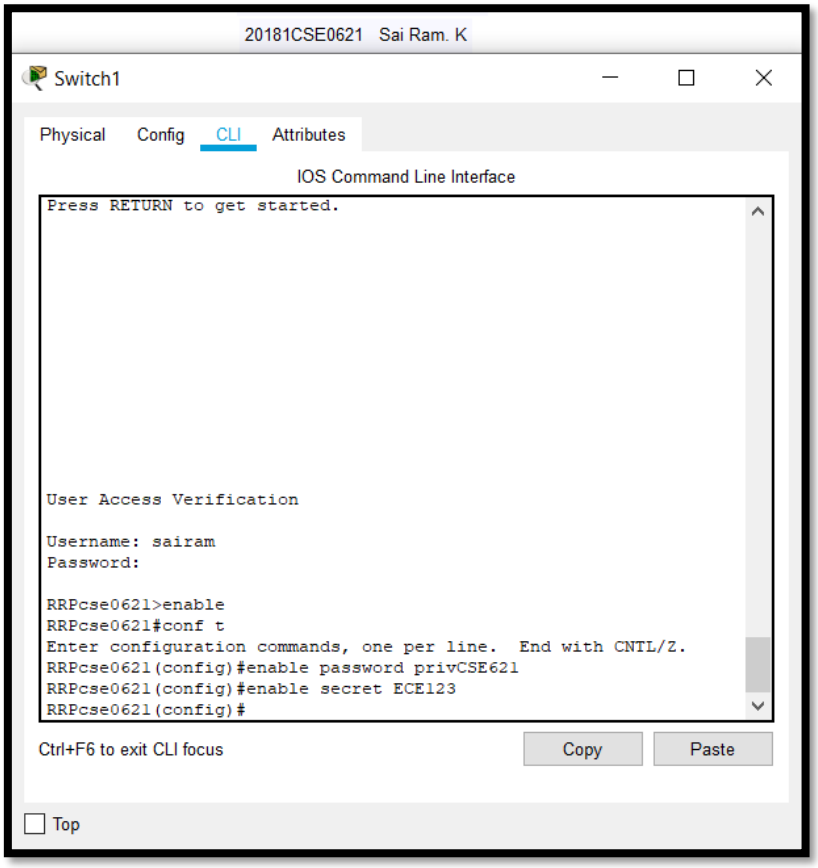
Step5] To set privileged encrypted password. Click on switch & CLI type the following:

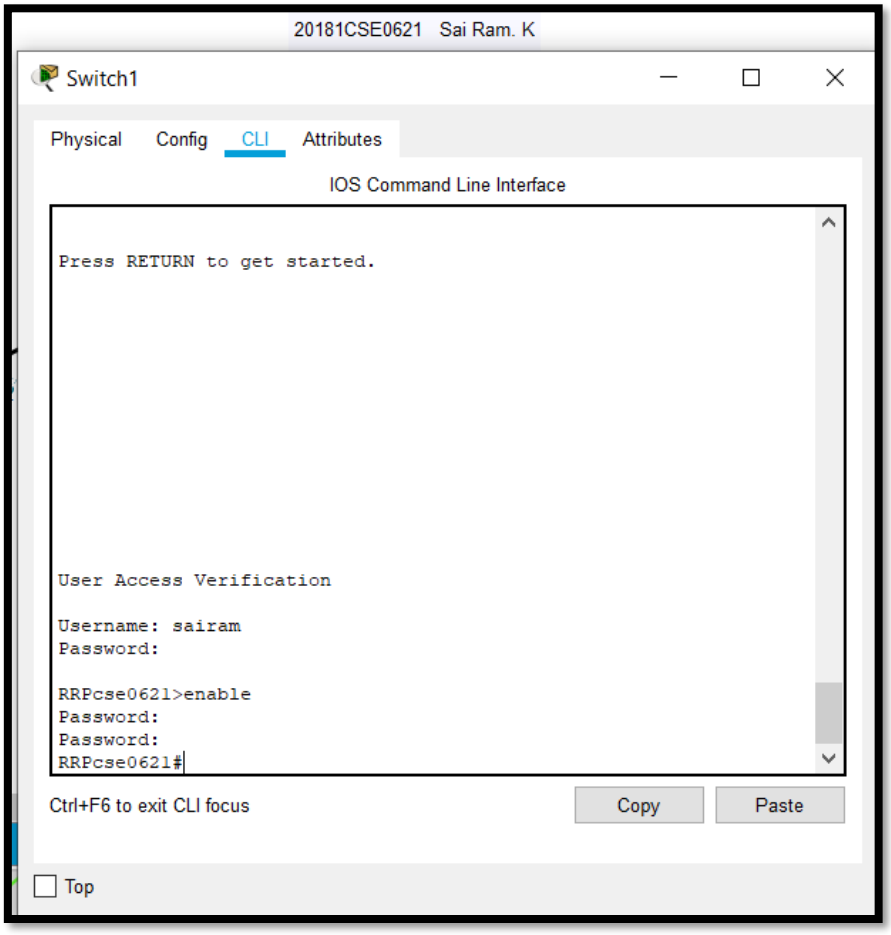
```
RRPCSE0621 >enable
RRPCSE0621 # conf t
RRPCSE0621(config)# enable password privCSE0621
RRPCSE0621 (config)# enable secret ECE123.
```

To verify authentication, type :-

```
RRPCSE0621(config)# exit
RRPCSE0621 # exit
User Access Verification
Username : Sairam
Password :
RRPcse0621 > enable
Password :
Password :
RRPCSE0621 #
```



Verifying encrypted password authentication:-



Question 2.

Client side

CSE0621_client.java

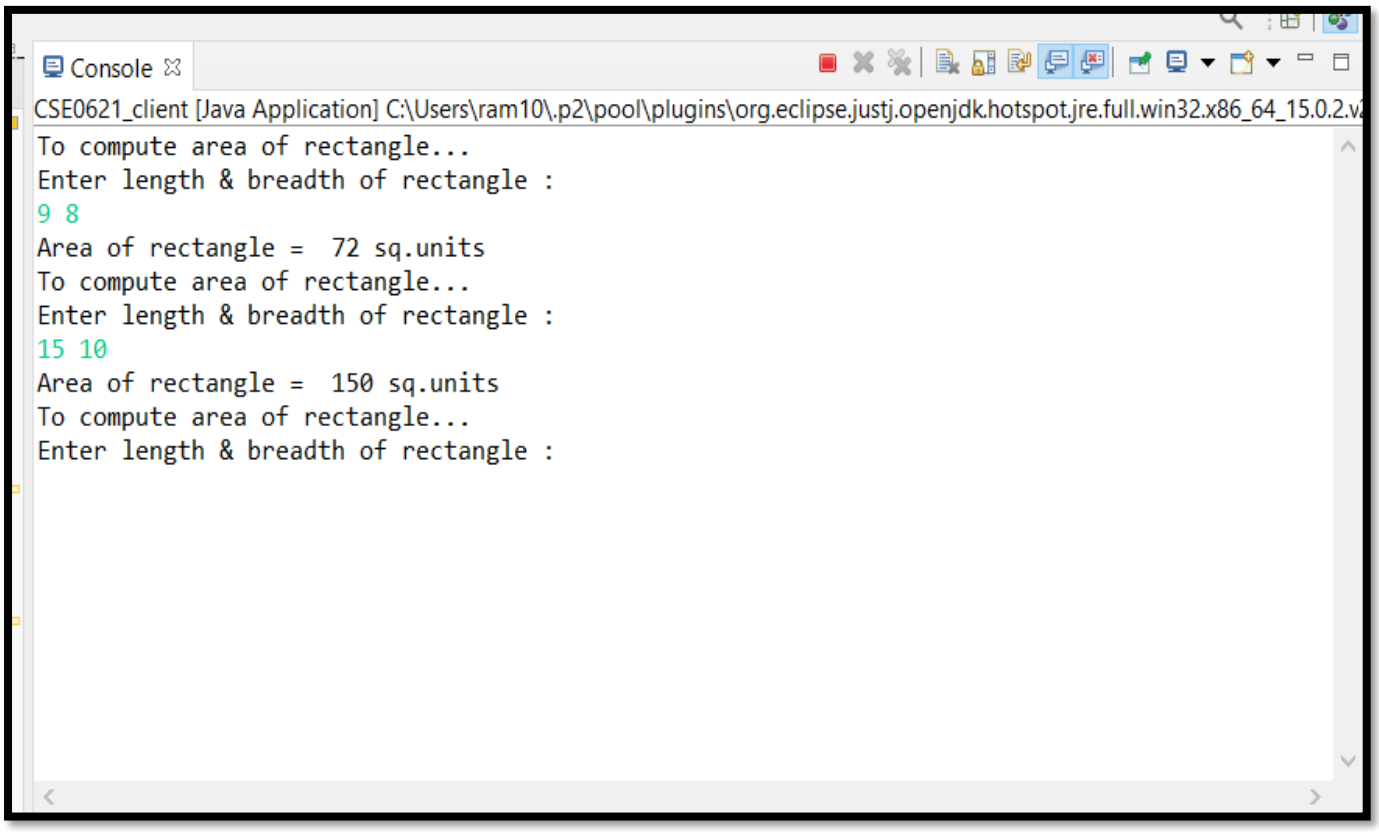
```
import java.net.*;
import java.io.*;
public class CSE0621_client {
    public static void main(String args[])throws IOException
       {
        Socket s=new Socket("localhost",54);
        DataInputStream in=new DataInputStream(s.getInputStream());
        DataOutputStream out=new DataOutputStream(s.getOutputStream());
        DataInputStream sysin=new DataInputStream(System.in);
        while(true)
        {
            System.out.println("To compute area of rectangle...");
         System.out.println("Enter length & breadth of rectangle : ");
         String str=sysin.readLine();
         out.writeBytes(str+"\n");

         if(str.equals("End"))
           break;
         System.out.println(in.readLine());
         }
         s.close();
        }
}

```

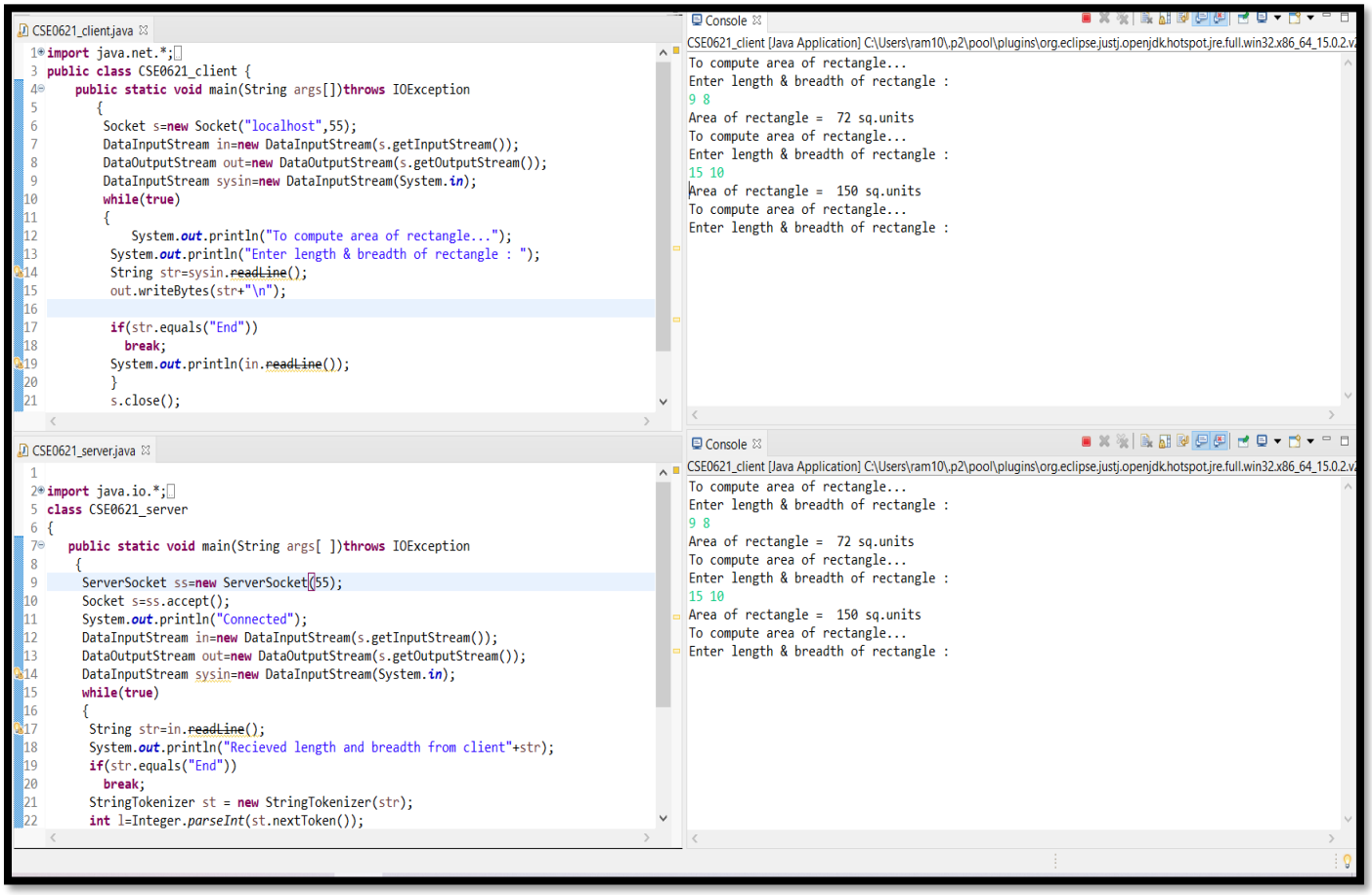
Server side

CSE0621_server.java

```
1
2  import java.io.*;
3  import java.net.*;
4  import java.util.StringTokenizer;
5  class CSE0621_server
6  {
7     public static void main(String args[ ])throws IOException
8      {
9       ServerSocket ss=new ServerSocket(54);
10      Socket s=ss.accept();
11      System.out.println("Connected");
12      DataInputStream in=new DataInputStream(s.getInputStream());
13      DataOutputStream out=new DataOutputStream(s.getOutputStream());
14      DataInputStream sysin=new DataInputStream(System.in);
15      while(true)
16      {
17       String str=in.readLine();
18       System.out.println("Recieved length and breadth from client"+str);
19       if(str.equals("End"))
20         break;
21       StringTokenizer st = new StringTokenizer(str);
22       int l=Integer.parseInt(st.nextToken());
23
24       int b=Integer.parseInt(st.nextToken());
25       int area = l*b;
26       System.out.println("Transferring result:"+area);
27       out.writeBytes("Area of rectangle =  "+area+" sq.units \n");
28      }
29     ss.close();
30     }
31 }
```

Output


Console
CSE0621_client [Java Application] C:\Users\ram10\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v
To compute area of rectangle...
Enter length & breadth of rectangle :
9 8
Area of rectangle = 72 sq.units
To compute area of rectangle...
Enter length & breadth of rectangle :
15 10
Area of rectangle = 150 sq.units
To compute area of rectangle...
Enter length & breadth of rectangle :


CSE0621_client.java
import java.net.*;
public class CSE0621_client {
public static void main(String args[])throws IOException
{
Socket s=new Socket("localhost",55);
DataInputStream in=new DataInputStream(s.getInputStream());
DataOutputStream out=new DataOutputStream(s.getOutputStream());
DataInputStream sysin=new DataInputStream(System.in);
while(true)
{
System.out.println("To compute area of rectangle...");
System.out.println("Enter length & breadth of rectangle : ");
String str=sysin.readLine();
out.writeBytes(str+"\n");
if(str.equals("End"))
break;
System.out.println(in.readLine());
}
s.close();
CSE0621_server.java
import java.io.*;
class CSE0621_server
{
public static void main(String args[ ])throws IOException
{
ServerSocket ss=new ServerSocket(55);
Socket s=ss.accept();
System.out.println("Connected");
DataInputStream in=new DataInputStream(s.getInputStream());
DataOutputStream out=new DataOutputStream(s.getOutputStream());
DataInputStream sysin=new DataInputStream(System.in);
while(true)
{
String str=in.readLine();
System.out.println("Recieved length and breadth from client"+str);
if(str.equals("End"))
break;
StringTokenizer st = new StringTokenizer(str);
int l=Integer.parseInt(st.nextToken());
Console
CSE0621_client [Java Application] C:\Users\ram10\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v
To compute area of rectangle...
Enter length & breadth of rectangle :
9 8
Area of rectangle = 72 sq.units
To compute area of rectangle...
Enter length & breadth of rectangle :
15 10
Area of rectangle = 150 sq.units
To compute area of rectangle...
Enter length & breadth of rectangle :
Console
CSE0621_client [Java Application] C:\Users\ram10\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.2.v
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To compute area of rectangle...
Enter length & breadth of rectangle :
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Area of rectangle = 150 sq.units
To compute area of rectangle...
Enter length & breadth of rectangle :

Written Code:

Client Side

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30-04-2021

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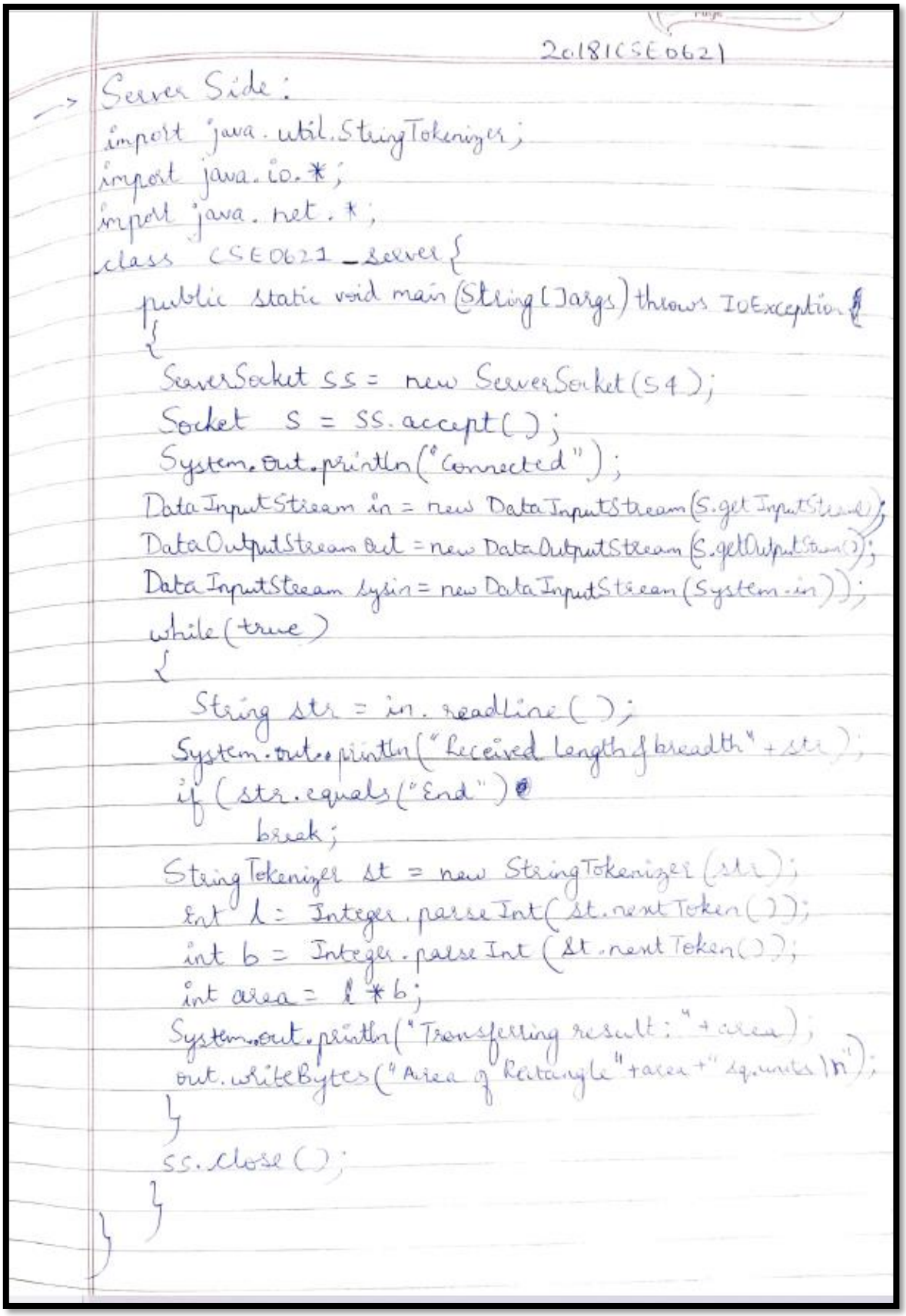
Q.2] Client side:-

```
import java.net.*;
import java.io.*;
public class CSE0621_Client{
   public static void main(String args[])throws IOException
  {
   Socket s = new Socket("localhost",54);
  DataInputStream in = new DataInputStream(s.getInputStream());
  DataOutputStream out = new DataOutputStream(s.getOutputStream());
  DataInputStream sysin = new DataInputStream(System.in);
  while (true){
        System.out.println("To compute area of rectangle...");
     System.out.println("Enter length & breadth:");
      String str = sysin.readLine();
     out.writeBytes(str+"\n");

     if str equals("End");
        break;
     System.out.println(in.readLine());
           }
      s.close();
   }
}
```

Server Side



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→ Server Side:

```
import java.util.StringTokenizer;
import java.io.*;
import java.net.*;
class CSE0621_Server{
  public static void main(String[]args) throws IOException{
  {
    ServerSocket ss = new ServerSocket(54);
    Socket s = ss.accept();
    System.out.println("Connected");
  DataInputStream in = new DataInputStream(s.getInputStream());
  DataOutputStream out = new DataOutputStream(s.getOutputStream());
  DataInputStream sysin = new DataInputStream(System.in));
  while(true)
  {
    String str = in.readLine();
  System.out.println("Received length & breadth" + str);
  if(str.equals("End")
      break;
  StringTokenizer st = new StringTokenizer(str);
  int l = Integer.parseInt(st.nextToken());
  int b = Integer.parseInt(st.nextToken());
  int area = l*b;
  System.out.println("Transferring result:" + area);
  out.writeBytes("Area of Rectangle" +area+" sq.units\n");
  }
  ss.close();
  }
}
```