

Source Code:

TCP

MyServer.java

```
import java.net.*; import java.io.*; class MyServer{    public
static void main(String args[])throws Exception{

        ServerSocket ss=new ServerSocket(3333);

        Socket s=ss.accept();

        DataInputStream din=new DataInputStream(s.getInputStream());

        DataOutputStream dout=new DataOutputStream(s.getOutputStream());

        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

        String str="",str2="";

        Double r;

        while(!str.equals("stop")){

            str=din.readUTF();

if(str.equals("stop"))

            break;

            r = Double.parseDouble(str);

            r = r*3.14/180;

            str2=new String(r + "");

            dout.writeUTF(str2);

dout.flush();

        }

        din.close();
```

```

        s.close();
    ss.close();

    }

}

```

MyClient.java

```

import java.net.*; import java.io.*; class MyClient{    public
static void main(String args[])throws Exception{

        Socket s=new Socket("localhost",3333);

        DataInputStream din=new DataInputStream(s.getInputStream());

        DataOutputStream dout=new DataOutputStream(s.getOutputStream());

        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

        String str="",str2="";

        while(!str.equals("stop")){

            System.out.println("Enter value in Degrees or 'stop' :");

            str=br.readLine();

            dout.writeUTF(str);

            dout.flush();

            if(str.equals("stop"))

                break;

            str2=din.readUTF();

            System.out.println("Server replied value in radian: "+str2);

        }
    }
}

```

```

        dout.close();

        s.close();

    }

}

```

UDP

ServerUDP.java

```

//Java program to illustrate Server side
//Implementation using DatagramSocket
import java.io.IOException;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.net.SocketException;
public class ServerUDP
{
    public static void main(String[] args) throws IOException
    {
        // Step 1 : Create a socket to listen at port 1234
        DatagramSocket ds = new DatagramSocket(1234);
        byte[] receive = new byte[65535];
        DatagramPacket DpReceive = null;
        while (true)
        {
            if (data(receive).equals("bye"))
            {
                System.out.println("Client sent bye.....EXITING");
                break;
            }
            // Step 2 : create a DatagramPacket to receive the data.
            DpReceive = new DatagramPacket(receive, receive.length);
            // Step 3 : receive the data in byte buffer.
            ds.receive(DpReceive);
            String s = data(receive);
            System.out.println("Recieved value in Degree:-" + s);
            float c = Float.parseFloat(s);
            c = c*3.14f;
            c= c/180;
            System.out.println("corresponding value in radian is " + c);
            // Exit the server if the client sends "bye"

```

```

// Clear the buffer after every message.
receive = new byte[65535];
}
}
// A utility method to convert the byte array
// data into a string representation.
public static String data(byte[] a)
{
if (a == null)
return null;
StringBuilder ret = new StringBuilder();
int i = 0;
while (a[i] != 0)
{
ret.append((char) a[i]);
i++;
}
return ret.toString();
}
}

```

ClientUDP1.java

```

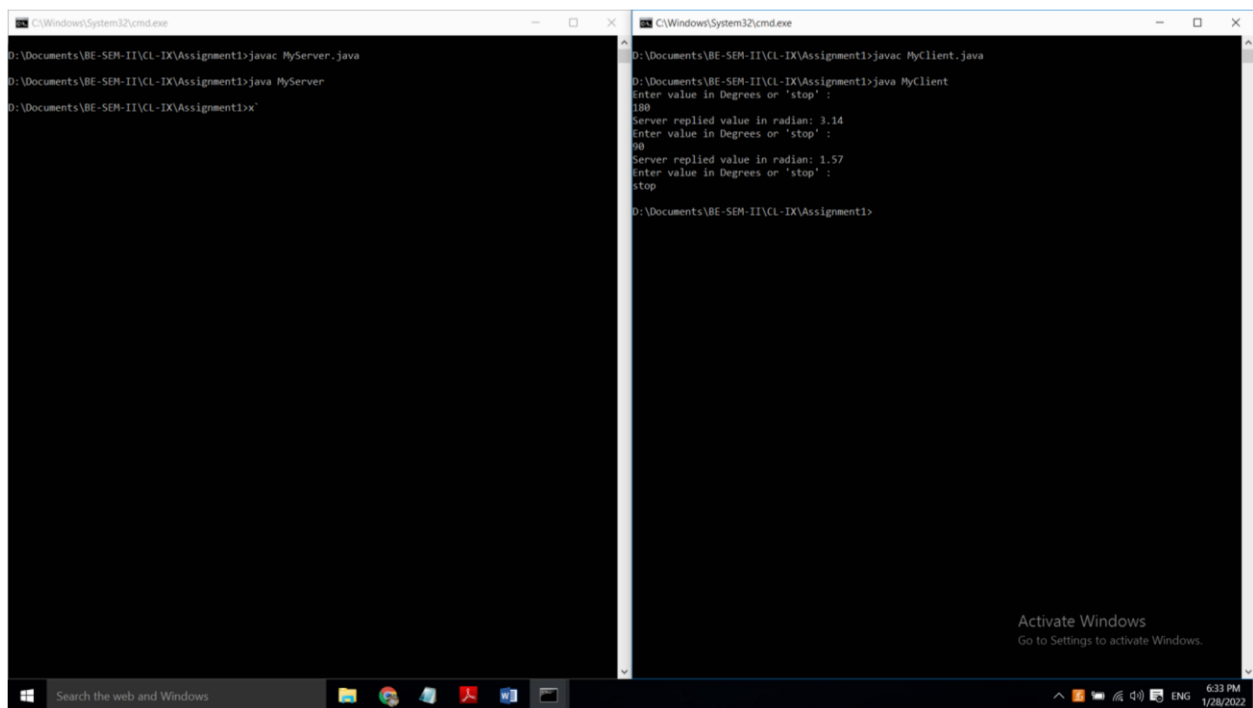
//Java program to illustrate Client side
//Implementation using DatagramSocket
import java.io.IOException;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.util.Scanner;
public class ClientUDP1
{
public static void main(String args[]) throws IOException
{
Scanner sc = new Scanner(System.in);
// Step 1:Create the socket object for
// carrying the data.
DatagramSocket ds = new DatagramSocket();
InetAddress ip = InetAddress.getLocalHost();
byte buf[] = null;
// loop while user not enters "bye"
System.out.println("Enter value in degree else 'bye' to exit");
while (true)
{
String eqn = sc.nextLine();
if (eqn.equals("bye"))

```

```
break;
buf = eqn.getBytes();
DatagramPacket DpSend = new DatagramPacket(buf,
buf.length, ip, 1234);
ds.send(DpSend);
}
}
}
```

Output:

TCP



The image shows two side-by-side Windows command prompt windows. The left window is titled 'C:\Windows\System32\cmd.exe' and shows the following commands and output:

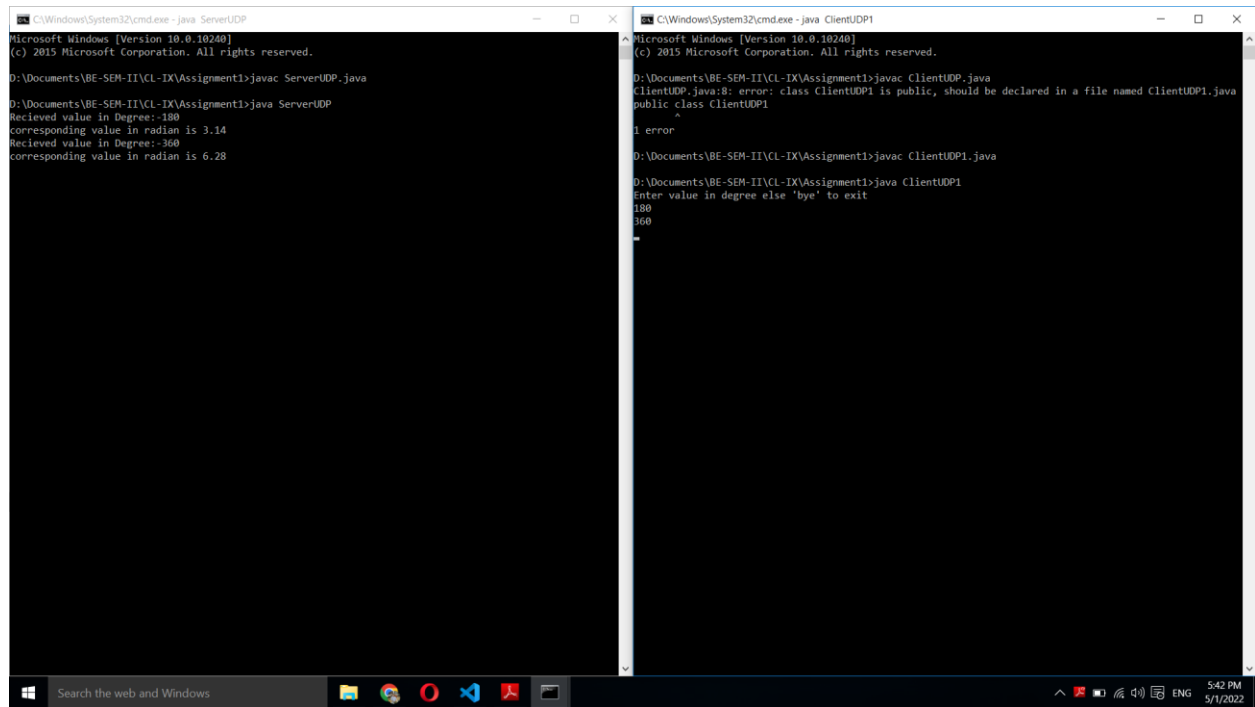
```
D:\Documents\BE-SEN-II\CL-IX\Assignment1>javac MyServer.java
D:\Documents\BE-SEN-II\CL-IX\Assignment1>java MyServer
D:\Documents\BE-SEN-II\CL-IX\Assignment1>
```

The right window is also titled 'C:\Windows\System32\cmd.exe' and shows the following commands and output:

```
D:\Documents\BE-SEN-II\CL-IX\Assignment1>javac MyClient.java
D:\Documents\BE-SEN-II\CL-IX\Assignment1>java MyClient
Enter value in Degrees or 'stop' :
180
Server replied value in radian: 3.14
Enter value in Degrees or 'stop' :
90
Server replied value in radian: 1.57
Enter value in Degrees or 'stop' :
stop
D:\Documents\BE-SEN-II\CL-IX\Assignment1>
```

At the bottom of the right window, there is a watermark that says 'Activate Windows Go to Settings to activate Windows.' The Windows taskbar is visible at the bottom of the screen, showing the search bar and several icons.

UDP



```
C:\Windows\System32\cmd.exe - java ServerUDP
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\Documents\BE-SEM-II\CL-IX\Assignment1>javac ServerUDP.java

D:\Documents\BE-SEM-II\CL-IX\Assignment1>java ServerUDP
Recieved value in Degree:-180
corresponding value in radian is 3.14
Recieved value in Degree:-360
corresponding value in radian is 6.28

C:\Windows\System32\cmd.exe - java ClientUDP1
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

D:\Documents\BE-SEM-II\CL-IX\Assignment1>javac ClientUDP.java
ClientUDP.java:8: error: class ClientUDP1 is public, should be declared in a file named ClientUDP1.java
public class ClientUDP1
      ^
1 error

D:\Documents\BE-SEM-II\CL-IX\Assignment1>javac ClientUDP1.java

D:\Documents\BE-SEM-II\CL-IX\Assignment1>java ClientUDP1
Enter value in degree else 'bye' to exit
180
360
bye
```