PRACTICAL 1

Practical 1A: A client server based program using TCP to find if the number entered is prime.

Code:

Pramod_248637_tcpServerPrime.java

```
import java.net.*;
import java.io.*;
class Pramod_248637_tcpServerPrime
{
  public static void main(String args[])
  {
  try
  {
  ServerSocket ss = new ServerSocket(8001);
  System.out.println("Server Started...............");
  Socket s = ss.accept();
  DataInputStream in = new DataInputStream(s.getInputStream()); int x= in.readInt();
  DataOutputStream otc = new DataOutputStream(s.getOutputStream()); int y = x/2;
  if(x ==1 || x ==2 || x ==3)
    {
    otc.writeUTF(x + "is Prime");
    System.exit(0);
    }
  for(int i=2; i<=y; i++)
  {
  if(x%i != 0)
    {
    otc.writeUTF(x + " is Prime");
    }
  else
  {
    otc.writeUTF(x + " is not Prime");
  }
  }
}
catch(Exception e)
{
System.out.println(e.toString());
}
}
}
```

Pramod_248637_tcpClientPrime.java

```
import java.net.*;
import java.io.*;
class Pramod_248637_tcpClientPrime
{
   public static void main(String args[])
   {
   try
   {
      Socket cs = new Socket("LocalHost",8001); BufferedReader infu = new
BufferedReader(new
      InputStreamReader(System.in));
      System.out.println("Enter a number : ");
      int a = Integer.parseInt(infu.readLine());
      DataOutputStream out = new
      DataOutputStream(cs.getOutputStream());
      out.writeInt(a);
      DataInputStream in = new DataInputStream(cs.getInputStream());
System.out.println(in.readUTF()); cs.close();
   }
catch(Exception e)
{
System.out.println(e.toString());
}
}
}
```

Output:

```
● PS F:\College\Sem6\CC\Prac\Prac1> javac .\Pramod_248637_tcpServerPrime.java
○ PS F:\College\Sem6\CC\Prac\Prac1> java .\Pramod_248637_tcpServerPrime.java
  Server Started..............
  █
● PS F:\College\Sem6\CC\Prac\Prac1> javac .\Pramod_248637_tcpClientPrime.java
● PS F:\College\Sem6\CC\Prac\Prac1> java .\Pramod_248637_tcpClientPrime.java
  Enter a number :
  34
  34 is not Prime
● PS F:\College\Sem6\CC\Prac\Prac1> java .\Pramod_248637_tcpClientPrime.java
  java.net.ConnectException: Connection refused: connect
● PS F:\College\Sem6\CC\Prac\Prac1> java .\Pramod_248637_tcpClientPrime.java
  Enter a number :
  31
  31 is Prime
○ PS F:\College\Sem6\CC\Prac\Prac1> █
```

Practical 1B: A client server TCP based chatting application.

Code:

Pramod_248637_ChatServer.java

```java
import java.net.*;
import java.io.*;
class Pramod_248637_ChatServer
{
   public static void main(String args[])
   {
   try
   {
      ServerSocket ss = new ServerSocket(8000);
      System.out.println("Waiting for client to connect..");
      Socket s = ss.accept();
      BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
      DataOutputStream out = new DataOutputStream(s.getOutputStream());
      DataInputStream in = new DataInputStream(s.getInputStream());
      String receive, send;
      while((receive = in.readLine()) != null)
      {
         if(receive.equals("STOP"))
            break;
         System.out.println("Client Says : "+receive);
         System.out.print("Server Says : ");
         send = br.readLine();
         out.writeBytes(send+"\n");
      }
   br.close();
   in.close();
   out.close();
   s.close();
}
catch(Exception e)
{
e.printStackTrace();
}
}
}
```

Pramod_248637_ChatClient.java

```java
import java.net.*;
import java.io.*;
class Pramod_248637_ChatClient
{
   public static void main(String args[])
   {
   try
   {
   Socket s = new Socket("Localhost",8000);
   BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
   DataOutputStream out = new DataOutputStream(s.getOutputStream());
   DataInputStream in = new DataInputStream(s.getInputStream());
   String msg;
   System.out.println("To stop chatting with server type STOP");
   System.out.print("Client Says: ");
   while((msg = br.readLine()) != null)
   {
      out.writeBytes(msg+"\n");
      if(msg.equals("STOP"))
         break;
      System.out.println("Server Says : "+in.readLine());
      System.out.print("Client Says : ");
   }
   br.close();
   in.close();
   out.close();
   s.close();
}
catch(Exception e)
{
e.printStackTrace();
}
}
}
```

Output:

```
PS F:\College\Sem6\CC\Prac\Prac1> javac Pramod_248637_ChatServer.java
Note: Pramod_248637_ChatServer.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS F:\College\Sem6\CC\Prac\Prac1> java Pramod_248637_ChatServer.java
Pramod_248637_ChatServer.java:16: warning: [deprecation] readLine() in DataInputStream has been deprecated
                while((receive = in.readLine()) != null)
                                 ^
1 warning
Waiting for client to connect..
Client Says : Hi
Server Says : Hi
Client Says : I am Pramod Sandeep Joshi
Server Says : Good to know
PS F:\College\Sem6\CC\Prac\Prac1> []
```

```
PS F:\College\Sem6\CC\Prac\Prac1> java Pramod_248637_ChatClient.java
Pramod_248637_ChatClient.java:21: warning: [deprecation] readLine() in DataInputStream has been deprecated
                System.out.println("Server Says : "+in.readLine());
                                                        ^
1 warning
To stop chatting with server type STOP
Client Says: Hi
Server Says : Hi
Client Says : I am Pramod Sandeep Joshi
Server Says : Good to know
Client Says :
```