

BCA Sixth Semester

Network Programming LAB Works.

A lab Report should consist of written code and output.

InetAddress And NeworkInterface Class:

1. Write a program that gets the localhost IP address, canonical name using InetAddress methods. Reference: inetAddress -> GetLocalHost.java
2. Write a program that lists out all the network interfaces and use the method of NetworkInterfaceClass to print the characteristics of all interfaces. Reference: inetAddress -> NetworkInterfaceClasses.java

URLConnection and URLClasses:

3. Write a program that prints all arbitrary HTTP headers.
4. Write a program that downloads WebPage with UrlConnection class. Your output on the lab report should consist of a few lines of output.
5. Write a program that return the Headers of HTTP using methods like getContentLength(), getDate(), getLastModified() etc. For reference, see ReturnHeader.java file from the github code repository for this subject.

Socket For Client:

6. Write a program to construct day time client using socket.
7. Write a program that show all the info of client socket using methods like **socket.getInetAddress()**, **socket.getLocalPort()** etc. Reference: socket for client-> SocketInfo.java

Socket For Servers:

8. Write a program with a socket to create Day Time Server.
9. Write a program to create a simple client and server where the client sends a message to server and server reads that message.

```
1 package com.simpleClientServerSocket;
2
3 import java.io.*;
4 import java.net.*;
5
6 public class MyServer
7 {
8     public static void main(String[] args) {
9         try {
10             ServerSocket ss = new ServerSocket(6666);
11             Socket s = ss.accept();// establishes connection
12             DataInputStream dis = new DataInputStream(s.getInputStream());
13             String str = (String) dis.readUTF();
14             System.out.println("message= " + str);
15             ss.close();
16         } catch (Exception e) {
17             System.out.println(e);
18         }
19     }
20
21 }
22
```

```

1 package com.simpleClientServerSocket;
2
3 import java.io.*;
4 import java.net.*;
5
6 public class MyClient {
7     public static void main(String[] args) {
8         try {
9             Socket s = new Socket("localhost", 6666);
10            DataOutputStream dout = new DataOutputStream(s.getOutputStream());
11            dout.writeUTF("Hello Server");
12            dout.flush();
13            dout.close();
14            s.close();
15        } catch (Exception e) {
16            System.out.println(e);
17        }
18    }
19 }
20 }
21

```

Output: _____-

10. Write a program that shows read and write both in client and server. **[Important]**

MyClient.java

```

4 import java.io.*;
5
6 class MyClient {
7     public static void main(String args[]) throws Exception {
8         Socket s = new Socket("localhost", 3333);
9         DataInputStream din = new DataInputStream(s.getInputStream());
10        DataOutputStream dout = new DataOutputStream(s.getOutputStream());
11        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
12
13        String str = "", str2 = "";
14        while (!str.equals("stop")) {
15            str = br.readLine();
16            dout.writeUTF(str);
17            dout.flush();
18            str2 = din.readUTF();
19            System.out.println("Server says: " + str2);
20            System.out.println("=====");
21        }
22
23        dout.close();
24        s.close();
25    }
26 }

```

MyServer.java

```
1 package com.readWriteBothSides;
2 import java.net.*;
3 import java.io.*;
4
5 class MyServer {
6     public static void main(String args[]) throws Exception {
7         ServerSocket ss = new ServerSocket(3333);
8         Socket s = ss.accept();
9         DataInputStream din = new DataInputStream(s.getInputStream());
10        DataOutputStream dout = new DataOutputStream(s.getOutputStream());
11        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
12        String str = "", str2 = "";
13        while (!str.equals("stop")) {
14            str = din.readUTF();
15            System.out.println("client says: " + str);
16            str2 = br.readLine();
17            dout.writeUTF(str2);
18            dout.flush();
19            System.out.println("=====");
20        }
21        din.close();
22        s.close();
23        ss.close();
24    }
25 }
```

Output: _____

SecureSocket:

11. Write a program to create a Secure Https Client with the secure socket.

UDP:

12. Write a program to create a daytime UDP client. Reference: Slide.
13. Write a program to create a daytime UDP Server. Reference: Slide.
14. Write a program that illustrates all the set and get methods of the UDP DatagramPacket class. Reference: SetGetMethodsUDPDemo.java
15. Write a program that illustrates the socket client using the UDP DatagramSocket class. Reference: UdpDatagramSocketClient.java and Slide
16. Write a program that illustrates the socket server using the UDP DatagramSocket class. Reference: UdpDatagramSocketServer.java and Slide

RMI:

17. Write a program to create an RMI Server and Client. Reference: Advance Java - RMI Chapter and its respective slide.

Output: _____

Note: Output is necessary. Whether you can attach printed output or handwritten output. All the programs associated should be hand-coded on the laptop and shown to me. Strictly to the deadline. These codes are the most probable that may also come in exams. Be prepared well in advance.