Department of Computer Science & Engineering.

Dt:24/02/2022.

Duration:2 hrs   Max marks:50.

PC 752 CS - Distributed Systems Practical External examination Question paper:

All students must answer two questions one from each PART

PART-A

1. Demonstrate the **Hello world service using RPC** with NetBeans IDE. (It uses the Publisher & Subscriber model to coordinate.)

2. Develop a Java GUI which implements the working of **Chat Server** with many Client processes.

3. Write the sequence of steps to understand the working of **Network files system-NFS**(includes exercises Configuration of NFS).

4. Use javax.swing.*; package to **implement FTP Client** with multiple instances.

PART-B

1. Develop an application using **3-tier architectures** with web service.

2. Write a java program to connect to **UDP Server** with relevant methods to transfer messages.

3. Write a java program to connect to **TCP Server** with relevant methods to transfer messages.

4. Give the steps for demonstrating **object brokering using CORBA.**

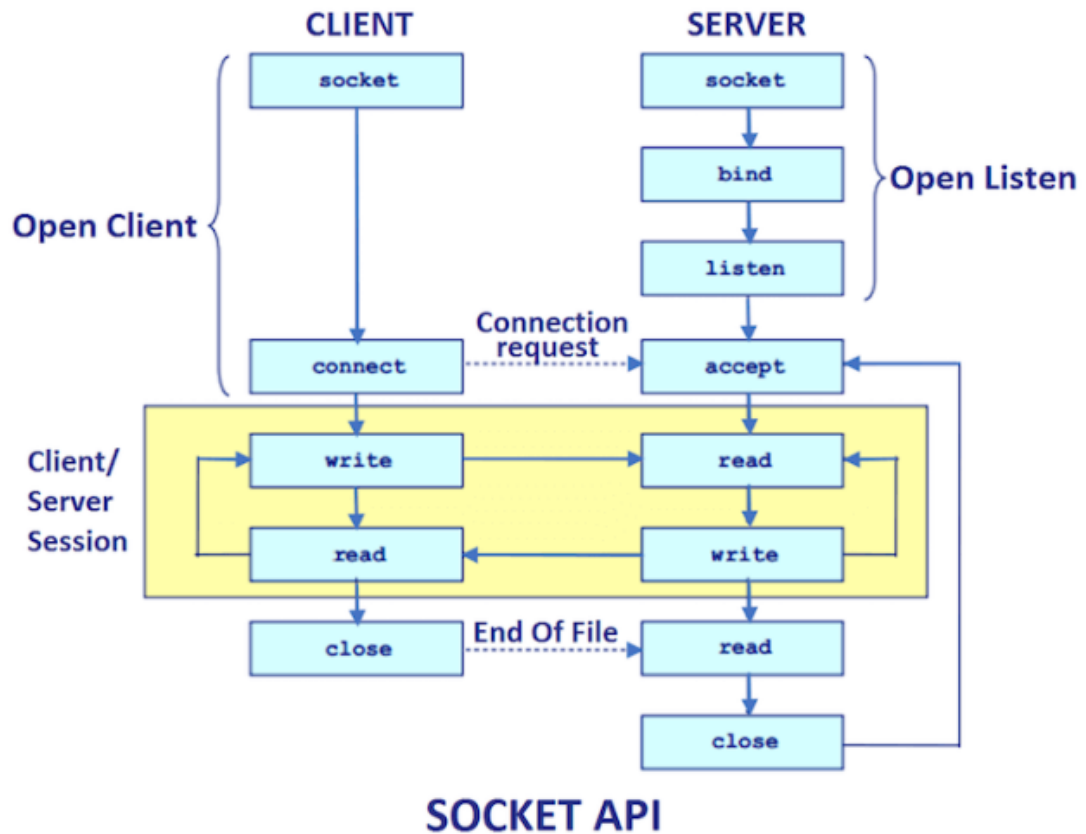5. Feature the **implementation of DNS(domain name server)** with a client - server application.

Program for Part-B Question 3.) TCP client & server:

SOCKET API

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="";
while(!str.equals("stop")){
str=din.readUTF();
System.out.println("client says: "+str);
str2=br.readLine();
dout.writeUTF(str2);
```

```java
dout.flush();
}
din.close();
s.close();
ss.close();
}}
```

MyClient.java

```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")){
str=br.readLine();
dout.writeUTF(str);
dout.flush();
str2=din.readUTF();
System.out.println("Server says: "+str2);
}
dout.close();
s.close();
}}
```

Program for Part-B Question 2.) UDP client & server:

```java
//DSender.java
import java.net.*;
public class DSender{
  public static void main(String[] args) throws Exception {
    DatagramSocket ds = new DatagramSocket();
    String str = "Welcome java";
    InetAddress ip = InetAddress.getByName("127.0.0.1");
    DatagramPacket dp = new DatagramPacket(str.getBytes(), str.length(), ip, 3000);
    ds.send(dp);
    ds.close();
  }
}

//DReceiver.java
import java.net.*;
public class DReceiver{
  public static void main(String[] args) throws Exception {
    DatagramSocket ds = new DatagramSocket(3000);
    byte[] buf = new byte[1024];
    DatagramPacket dp = new DatagramPacket(buf, 1024);
    ds.receive(dp);
    String str = new String(dp.getData(), 0, dp.getLength());
    System.out.println(str);
    ds.close();
  } }
```


Concept of Queuing in UPD protocol