**Lab3**

**Q1) TCP/IP Chat Programme**

**Java Code:**

**Client:**

import java.io.\*;

import java.net.\*;

import java.util.Scanner;

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\*

\* @author Abhishek Karan

\*/

public class ChatClient {

Socket clientsock = null;// new Socket("localhost", 1121);

DataOutputStream dos = null;

Scanner sc = new Scanner(System.in);

DataInputStream dis = null;

String str = null;//sc.nextLine();

public void Send() {

Thread ts = new Thread() {

public void run() {

while (clientsock.isConnected()) {

try {

System.out.println("Enter Message:");

str = sc.nextLine();

synchronized (clientsock) {

dos.writeUTF(str);

}

Thread.sleep(400);

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//while

}//run

};//threads

ts.setPriority(Thread.MAX\_PRIORITY);

ts.start();

}//send()

public void Receive() {

Thread tr = new Thread() {

public void run() {

while (clientsock.isConnected()) {

try {

str = dis.readUTF();

System.out.println("Message from Server:" + str);

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//while

}//run

};//threads

tr.setPriority(Thread.MAX\_PRIORITY);

tr.start();

}//Receive()

public void createConnection() {

try {

clientsock = new Socket("localhost", 1121);

dos = new DataOutputStream(clientsock.getOutputStream());

dis = new DataInputStream(clientsock.getInputStream());

Receive();

Send();

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//createConnection()

public static void main(String[] args) {

ChatClient cc = new ChatClient();

cc.createConnection();

}//main()

}//class

**Server:**

import java.io.DataInputStream;

import java.io.DataOutputStream;

import java.net.\*;

import java.util.Scanner;

/\*\*

\*

\* @author Abhishek Karan

\*/

public class ChatServer {

ServerSocket serversock = null;//new ServerSocket(1121);

Socket sock = null;// new Socket("localhost", 1121);

DataOutputStream dos = null;

Scanner sc = new Scanner(System.in);

DataInputStream dis = null;

String str = null;//sc.nextLine();

public void Send() {

Thread ts = new Thread() {

public void run() {

while (sock.isConnected()) {

try {

System.out.println("Enter Message:");

str = sc.nextLine();

synchronized (sock) {

dos.writeUTF(str);

}

Thread.sleep(400);

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//while

}//run

};//threads

ts.setPriority(Thread.MAX\_PRIORITY);

ts.start();

}//send()

public void Receive() {

Thread tr = new Thread() {

public void run() {

while (sock.isConnected()) {

try {

str = dis.readUTF();

System.out.println("Message from Server:" + str);

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//while

}//run

};//threads

tr.setPriority(Thread.MAX\_PRIORITY);

tr.start();

}//Receive()

public void createConnection() {

try {

serversock = new ServerSocket(1121);

while (true) {

sock = serversock.accept();

dis = new DataInputStream(sock.getInputStream());

dos = new DataOutputStream(sock.getOutputStream());

Receive();

Send();

}//while

} catch (Exception e) {

System.out.println(e.getMessage());

}//try-catch

}//createConnection()

public static void main(String[] args) {

ChatServer cs = new ChatServer();

cs.createConnection();

}//main()

}//class

**Q2) TCP/IP Demostration:**

**Java Code:**

**Client:**

package Ques1;

import java.io.\*;

import java.net.\*;

import java.util.Scanner;

/\*\*

\*

\* @author Abhishek Karan

\*/

public class TCPClient {

public static void main(String[] args) {

try {

Socket sock = new Socket("localhost", 1121);

DataOutputStream dos = new DataOutputStream(sock.getOutputStream());

System.out.println("Enter Message:");

Scanner sc = new Scanner(System.in);

String str = sc.nextLine();

dos.writeUTF(str);

DataInputStream dis = new DataInputStream(sock.getInputStream());

System.out.println("Client:" + (String) dis.readUTF());

dos.flush();

dos.close();

sock.close();

} catch (Exception e) {

System.out.println(e.getMessage());

}

}//main()

}//class

**Server:**

package Ques1;

import java.io.DataInputStream;

import java.io.DataOutputStream;

import java.net.\*;

import java.util.Scanner;

/\*\*

\*

\* @author Abhishek Karan

\*/

public class TCPServer {

public static void main(String[] args) {

try {

Scanner sc = new Scanner(System.in);

ServerSocket ss = new ServerSocket(1121);

Socket sock = ss.accept();

DataInputStream dis = new DataInputStream(sock.getInputStream());

String str = (String) dis.readUTF();

System.out.println("Server:" + str);

System.out.println("Enter Message:");

str = sc.nextLine();

DataOutputStream dos = new DataOutputStream(sock.getOutputStream());

dos.writeUTF(str);

sock.close();

} catch (Exception e) {

System.out.println(e.getMessage());

}

}//main

}//class

**Q3) UDP Demonstration:**

**Java Code:**

**Client:**

package Ques1;

import java.net.\*;

import java.util.Scanner;

/\*\*

\*

\* @author Abhishek Karan

\*/

public class UDPClient {

public static void main(String[] args) {

try {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Message:");

String str = sc.nextLine();

DatagramSocket dgs = new DatagramSocket();

InetAddress ina = InetAddress.getByName("127.0.0.1");

DatagramPacket dgp = new DatagramPacket(str.getBytes(), str.length(), ina, 1121);

dgs.send(dgp);

dgs.close();

} catch (Exception e) {

System.out.println(e.getMessage());

}

}//main()

}//class

**Server:**

package Ques1;

import java.net.\*;

import java.util.Scanner;

/\*\*

\*

\* @author Abhishek Karan

\*/

public class UDPServer {

public static void main(String[] args) {

try {

Scanner sc = new Scanner(System.in);

DatagramSocket dgs = new DatagramSocket(1121);

byte[] buf = new byte[1024];

DatagramPacket dgp = new DatagramPacket(buf, buf.length);

dgs.receive(dgp);

String str = new String(dgp.getData(), 0, dgp.getLength());

System.out.println("Server:" + str);

//System.out.println("Enter Message:");

//str = sc.nextLine();

dgs.send(dgp);

dgs.close();

} catch (Exception e) {

System.out.println(e.getMessage());

}

}//main()

}//class

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