**Lab 3: Socket programming code**

**TCP Server:**

package tcpserver;

import java.io.\*;

import java.net.\*;

public class TCPServer {

public static void main(String argv[]) throws Exception {

String clientSentence;

ServerSocket welcomeSocket = new ServerSocket(6789);

while (true) {

Socket connectionSocket = welcomeSocket.accept();

BufferedReader inFromClient

= new BufferedReader(new InputStreamReader(connectionSocket.getInputStream()));

DataOutputStream outToClient

= new DataOutputStream(connectionSocket.getOutputStream());

clientSentence = inFromClient.readLine();

String capitalizedSentence = clientSentence.toUpperCase() + '\n';

System.out.println(capitalizedSentence);

outToClient.writeBytes(capitalizedSentence);

}

}

}

**TCP Client:**

package tcpclient;

import java.io.\*;

import java.net.\*;

public class TCPclient {

public static void main(String argv[]) throws Exception

{

String sentence;

String modifiedSentence;

BufferedReader inFromUser =

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

Socket clientSocket = new Socket("DESKTOP-JNU", 6789);

DataOutputStream outToServer =

new DataOutputStream(clientSocket.getOutputStream());

BufferedReader inFromServer =

new BufferedReader(new

InputStreamReader(clientSocket.getInputStream()));

sentence = inFromUser.readLine();

outToServer.writeBytes(sentence + '\n');

modifiedSentence = inFromServer.readLine();

System.out.println("FROM SERVER: " + modifiedSentence);

outToServer.close();

clientSocket.close();

}

}

**UDP Server:**

package udpserver;

import java.io.\*;

import java.net.\*;

public class UDPServer {

public static void main(String args[]) throws Exception {

DatagramSocket serverSocket = new DatagramSocket(9876);

byte[] receiveData = new byte[1024];

byte[] sendData = new byte[1024];

while (true) {

DatagramPacket receivePacket

= new DatagramPacket(receiveData, receiveData.length);

serverSocket.receive(receivePacket);

String sentence = new String(receivePacket.getData());

InetAddress IPAddress = receivePacket.getAddress();

int port = receivePacket.getPort();

String capitalizedSentence = sentence.toUpperCase();

sendData = capitalizedSentence.getBytes();

DatagramPacket sendPacket

= new DatagramPacket(sendData, sendData.length, IPAddress,

port);

serverSocket.send(sendPacket);

}

}

}

**UDP Client:**

package udpclient;

import java.io.\*;

import java.net.\*;

public class UDPClient {

public static void main(String args[]) throws Exception {

BufferedReader inFromUser

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

DatagramSocket clientSocket = new DatagramSocket();

InetAddress IPAddress = InetAddress.getByName("DESKTOP-JNU");

byte[] sendData = new byte[1024];

byte[] receiveData = new byte[1024];

String sentence = inFromUser.readLine();

sendData = sentence.getBytes();

DatagramPacket sendPacket

= new DatagramPacket(sendData, sendData.length, IPAddress, 9876);

clientSocket.send(sendPacket);

DatagramPacket receivePacket

= new DatagramPacket(receiveData, receiveData.length);

clientSocket.receive(receivePacket);

String modifiedSentence

= new String(receivePacket.getData());

System.out.println("FROM SERVER:" + modifiedSentence);

clientSocket.close();

}

}