**d. TCP concurrent server to echo given set of sentences.**

**Socket server:**

package com.journaldev.socket;

import java.io.IOException;

import java.io.ObjectInputStream;

import java.io.ObjectOutputStream;

import java.lang.ClassNotFoundException;

import java.net.ServerSocket;

import java.net.Socket;

/\*\*

\* This class implements java Socket server

\*/

public class SocketServerExample {

//static ServerSocket variable

private static ServerSocket server;

//socket server port on which it will listen

private static int port = 9876;

public static void main(String args[]) throws IOException, ClassNotFoundException{

//create the socket server object

server = new ServerSocket(port);

//keep listens indefinitely until receives 'exit' call or program terminates

while(true){

System.out.println("Waiting for the client request");

//creating socket and waiting for client connection

Socket socket = server.accept();

//read from socket to ObjectInputStream object

ObjectInputStream ois = new ObjectInputStream(socket.getInputStream());

//convert ObjectInputStream object to String

String message = (String) ois.readObject();

System.out.println("Message Received: " + message);

//create ObjectOutputStream object

ObjectOutputStream oos = new ObjectOutputStream(socket.getOutputStream());

//write object to Socket

oos.writeObject("Hi Client "+message);

//close resources

ois.close();

oos.close();

socket.close();

//terminate the server if client sends exit request

if(message.equalsIgnoreCase("exit")) break;

}

System.out.println("Shutting down Socket server!!");

//close the ServerSocket object

server.close();

}

}

**socket client:**

import java.io.IOException;

import java.io.ObjectInputStream;

import java.io.ObjectOutputStream;

import java.net.InetAddress;

import java.net.Socket;

import java.net.UnknownHostException;

/\*\*

\* This class implements java socket client

\*/

public class SocketClientExample {

public static void main(String[] args) throws UnknownHostException, IOException, ClassNotFoundException, InterruptedException{

//get the localhost IP address, if server is running on some other IP, you need to use that

InetAddress host = InetAddress.getLocalHost();

Socket socket = null;

ObjectOutputStream oos = null;

ObjectInputStream ois = null;

for(int i=0; i<5;i++){

//establish socket connection to server

socket = new Socket(host.getHostName(), 9876);

//write to socket using ObjectOutputStream

oos = new ObjectOutputStream(socket.getOutputStream());

System.out.println("Sending request to Socket Server");

if(i==4)oos.writeObject("exit");

else oos.writeObject(""+i);

//read the server response message

ois = new ObjectInputStream(socket.getInputStream());

String message = (String) ois.readObject();

System.out.println("Message: " + message);

//close resources

ois.close();

oos.close();

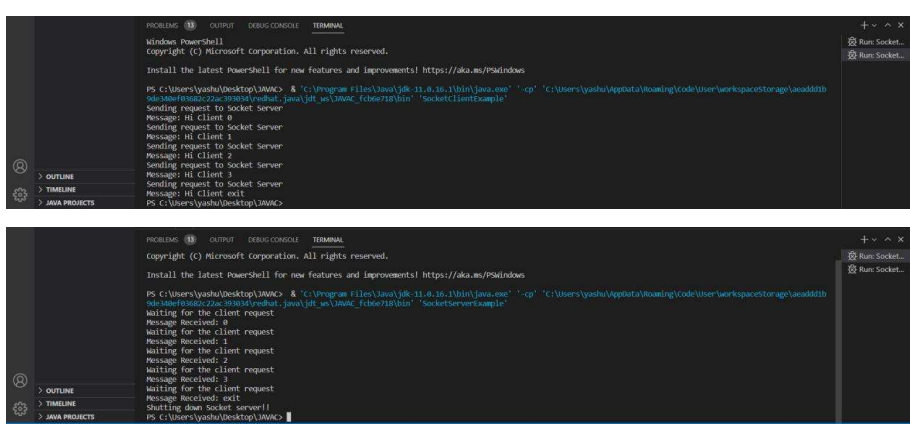
Thread.sleep(100);

}

}

}

**OUTPUT:**

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