**Code**

Client.java

package exp\_1.program;

import java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStreamReader;

import java.io.PrintWriter;

import java.net.Socket;

import java.util.Scanner;

public class ClientJava {

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

String hostname = args[0];

Integer portnumber = Integer.parseInt(args[1]);

try(

Socket sock = new Socket(hostname,portnumber);

BufferedReader in = new BufferedReader(

new InputStreamReader(

sock.getInputStream()

)

);

PrintWriter out = new PrintWriter(sock.getOutputStream(),true);

){

String fromServer, fromUser;

Scanner stdIn = new Scanner(System.in);

while((fromServer = in.readLine()) != null){

System.out.println(fromServer);

if (fromServer.equals("Bye.")) break;

fromUser = stdIn.nextLine();

if (fromUser!=null){

out.println(fromUser);

}

}

}

}

}

Server.java

package exp\_1.program;

import java.io.BufferedReader;

import java.io.InputStreamReader;

import java.io.PrintWriter;

import java.net.ServerSocket;

import java.net.Socket;

class ServerJava{

    public static class KnockKnockProtocol {

        private static final int WAITING = 0;

        private static final int SENTKNOCKKNOCK = 1;

        private static final int SENTCLUE = 2;

        private static final int ANOTHER = 3;

        private static final int NUMJOKES = 5;

        private int state = WAITING;

        private int currentJoke = 0;

        private String[] clues = { "Turnip", "Little Old Lady", "Atch", "Who", "Who" };

        private String[] answers = { "Turnip the heat, it's cold in here!",

                                     "I didn't know you could yodel!",

                                     "Bless you!",

                                     "Is there an owl in here?",

                                     "Is there an echo in here?" };

        public String processInput(String theInput) {

            String theOutput = null;

            if (state == WAITING) {

                theOutput = "Knock! Knock!";

                state = SENTKNOCKKNOCK;

            } else if (state == SENTKNOCKKNOCK) {

                if (theInput.equalsIgnoreCase("Who's there?")) {

                    theOutput = clues[currentJoke];

                    state = SENTCLUE;

                } else {

                    theOutput = "You're supposed to say \"Who's there?\"! " +

                    "Try again. Knock! Knock!";

                }

            } else if (state == SENTCLUE) {

                if (theInput.equalsIgnoreCase(clues[currentJoke] + " who?")) {

                    theOutput = answers[currentJoke] + " Want another? (y/n)";

                    state = ANOTHER;

                } else {

                    theOutput = "You're supposed to say \"" +

                    clues[currentJoke] +

                    " who?\"" +

                    "! Try again. Knock! Knock!";

                    state = SENTKNOCKKNOCK;

                }

            } else if (state == ANOTHER) {

                if (theInput.equalsIgnoreCase("y")) {

                    theOutput = "Knock! Knock!";

                    if (currentJoke == (NUMJOKES - 1))

                        currentJoke = 0;

                    else

                        currentJoke++;

                    state = SENTKNOCKKNOCK;

                } else {

                    theOutput = "Bye.";

                    state = WAITING;

                }

            }

            return theOutput;

        }

    }

    public static void main(String[] args) {

        int portNumber = Integer.parseInt(args[0]);

        try(

            ServerSocket ServerSocket = new ServerSocket(portNumber);

            Socket client = ServerSocket.accept();

            PrintWriter out = new PrintWriter(

                client.getOutputStream(),true

            );

            BufferedReader inBuffer = new BufferedReader(

                new InputStreamReader(client.getInputStream())

            );

        ){

            String inputLine, outputLine;

            KnockKnockProtocol kkp = new ServerJava.KnockKnockProtocol();

            outputLine = kkp.processInput(null);

            out.println(outputLine);

            while((inputLine=inBuffer.readLine()) != null){

                outputLine = kkp.processInput(inputLine);

                out.println(outputLine);

                if (outputLine.equals("Bye.")) break;

            }

        }catch (Exception e){

            System.err.println(e.getStackTrace());

        }

    }

}

**Output**



