**Practical 1.8**

**Aim:**

Implement any one sorting algorithm using TCP/UDP on Server application and Give Input On Client side and client should sorted output from server and display sorted on input side.

**Program code:**

**Description:**

**//Insertion Sort**

int temp**;**

**for(**int j**=**1**;**j**<**n**;**j**++){**

**for(**int k**=**j**;**k**>**0**;**k**--){**

**if(**a**[**k**]<**a**[**k**-**1**]){**

temp **=**a**[**k**];**

a**[**k**]=**a**[**k**-**1**];**

a**[**k**-**1**]=**temp;

**}**

**}**

**}**

**TCP Client:**

**import** java**.**io**.\*;**

**import** java**.**net**.\*;**

**import** java**.**util**.\*;**

public class SortClient **{**

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

String serverHostname **=** **new** String **(**"127.0.0.1"**);**

**if** **(**args**.**length **>** 0**)**

serverHostname **=** args**[**0**];**

System**.**out**.**println **(**"Attemping to connect to host " **+**

serverHostname **+** " on port 10007."**);**

System**.**out**.**println**(**"\nEno=130050131069"**);**

Socket s **=** **null;**

PrintWriter out **=** **null;**

BufferedReader in **=** **null;**

**try** **{**

// s = new Socket("taranis", 7);

s **=** **new** Socket**(**serverHostname**,** 10007**);**

out **=** **new** PrintWriter**(**s**.**getOutputStream**(),** **true);**

in **=** **new** BufferedReader**(new** InputStreamReader**(**s**.**getInputStream**()));**

**}**

**catch** **(**UnknownHostException e**){**

System**.**err**.**println**(**"Don't know about host: " **+** serverHostname**);**

System**.**exit**(**1**);**

**}**

**catch** **(**IOException e**){**

System**.**err**.**println**(**"Couldn't get I/O for " **+** "the connection to: " **+** serverHostname**);**

System**.**exit**(**1**);**

**}**

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

String userInput**;**

int n**;**

System**.**out**.**println**(**"\nHow many numbers to be sorted..?"**);**

n**=**Integer**.**parseInt**(**stdIn**.**readLine**());**

out**.**println**(**""**+**n**);**

int i**=**0**;**

int**[]** list**=new** int**[**n**];**

**while** **(**i**<**n**){**

System**.**out**.**println**(**"\nEnter numbers..."**+(**i**+**1**)+**":"**);**

userInput**=**stdIn**.**readLine**();**

out**.**println**(**userInput**);**

i**++;**

**}**

i**=**0**;**

System**.**out**.**println**(**"Sorted numbers..:"**);**

**while** **(**i**<**n**){**

System**.**out**.**println**(**in**.**readLine**());**

i**++;**

**}**

out**.**close**();**

in**.**close**();**

stdIn**.**close**();**

s**.**close**();**

**}**

**}**

**TCP Server:**

**import** java**.**net**.\*;**

**import** java**.**io**.\*;**

public class SortServer**{**

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

ServerSocket ss **=** **null;**

**try{**

ss **=** **new** ServerSocket**(**10007**);**

**}**

**catch** **(**IOException e**){**

System**.**err**.**println**(**"Could not listen on port: 10007."**);**

System**.**exit**(**1**);**

**}**

Socket s**=** **null;**

System**.**out**.**println **(**"Waiting for connection....."**);**

**try{**

s**=** ss**.**accept**();**

**}**

**catch** **(**IOException e**)** **{**

System**.**err**.**println**(**"Accept failed."**);**

System**.**exit**(**1**);**

**}**

System**.**out**.**println **(**"\nConnection successful"**);**

System**.**out**.**println **(**"\nWaiting for input....."**);**

System**.**out**.**println**(**"\nEno=130050131069"**);**

PrintWriter out **=** **new** PrintWriter**(**s**.**getOutputStream**(),** **true);**

BufferedReader in **=** **new** BufferedReader**(new** InputStreamReader**(**s**.**getInputStream**()));**

String inputLine**;**

inputLine **=** in**.**readLine**();**

int n**=**Integer**.**parseInt**(**inputLine**);**

int**[]** a**=new** int**[**n**];**

System**.**out**.**println**(**"\nNumber of inputs:"**+**n**);**

int i**=**0**;**

System**.**out**.**println**(**"\nInput:"**);**

**while** **(**i**<**n**){**

inputLine **=** in**.**readLine**();**

a**[**i**]=**Integer**.**parseInt**(**inputLine**);**

System**.**out**.**println**(**a**[**i**]);**

i**++;**

**}**

int temp**;**

**for(**int j**=**1**;**j**<**n**;**j**++){**

**for(**int k**=**j**;**k**>**0**;**k**--){**

**if(**a**[**k**]<**a**[**k**-**1**]){**

temp**=**a**[**k**];**

a**[**k**]=**a**[**k**-**1**];**

a**[**k**-**1**]=**temp**;**

**}**

**}**

**}**

i**=**0**;**

**while** **(**i**<**n**){**

out**.**println**(**""**+**a**[**i**]);**

i**++;**

**}**

out**.**close**();**

in**.**close**();**

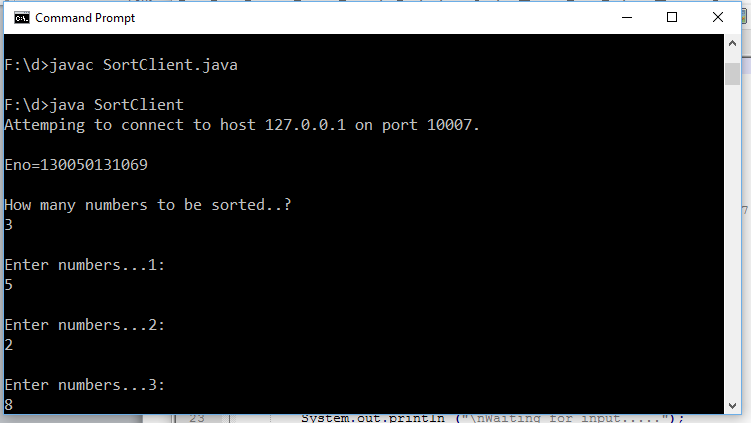
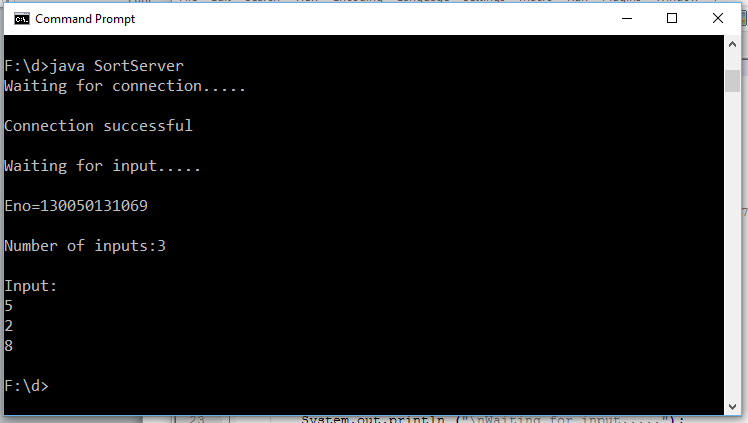
s**.**close**();**

ss**.**close**();**

**}**

**}**

**Input Output:**

****