PRACTICAL-3

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:

- Server:

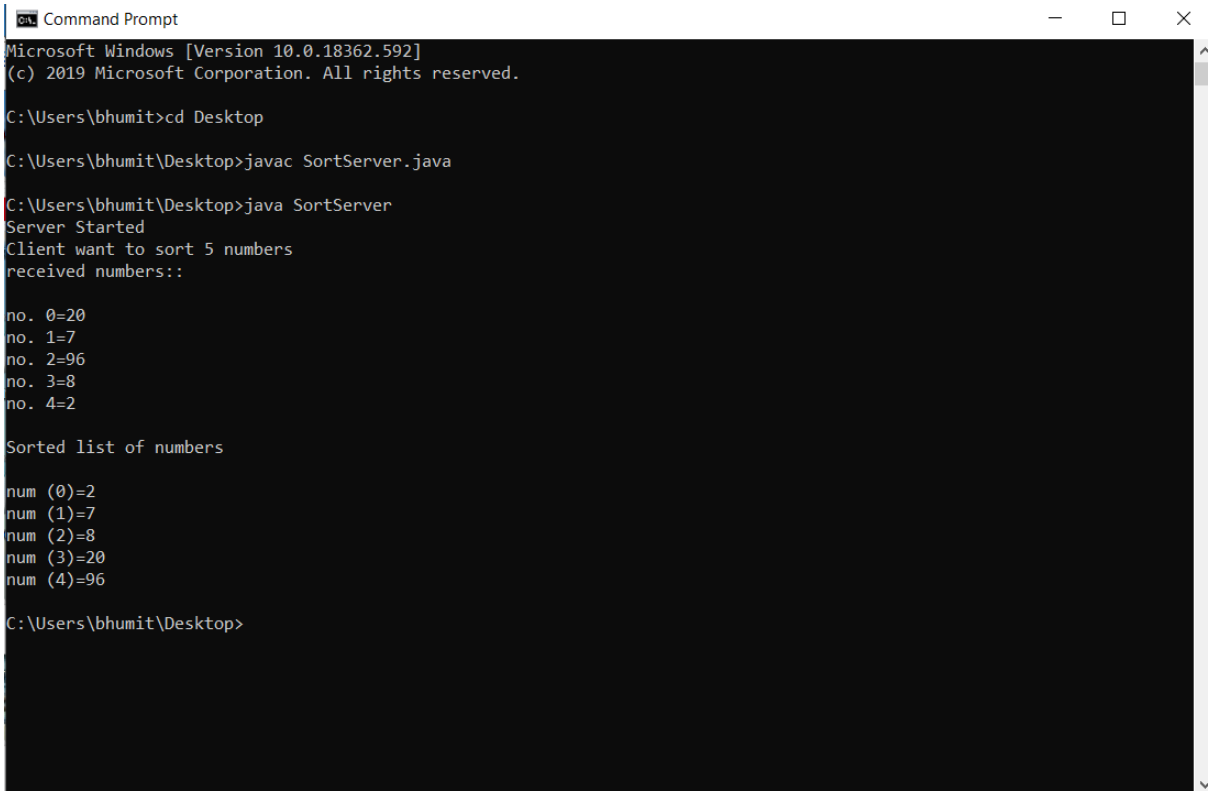
```
import java.io.*;
import java.net.*;
class SortServer
{
    public static void main(String ar[]) throws Exception
     {
        ServerSocket s1=new ServerSocket(12345);
        System.out.println("Server Started");
        Socket s=s1.accept();
        PrintWriter p=new PrintWriter(s.getOutputStream());
BufferedReader in=newBufferedReader(newInputStreamReader(s.getInputStream()));
        String num=in.readLine();
        int n=Integer.parseInt(num);
        System.out.println("Client want to sort "+n+" numbers");
        String sarr[]=new String[n];
        int arr[]=new int[n];
        int swap,c,d;
        System.out.println("received numbers::\n");
        for(int i=0;i<n;i++)
         {
           sarr[i]=in.readLine();
           arr[i]=Integer.parseInt(sarr[i]);
           System.out.println("no. "+i+"="+arr[i]);
         }
        for (c = 0; c < ( n - 1 ); c++)
         {
            for (d = 0; d < n - c - 1; d++)
              {
                if (arr[d] > arr[d+1])
                 {
                   swap=arr[d];
                   arr[d]=arr[d+1];
                   arr[d+1] = swap;
                 }
              }
         }
         System.out.println("\nSorted list of numbers");
         String sendarr=new String();
         for (c = 0; c < n; c++)
```

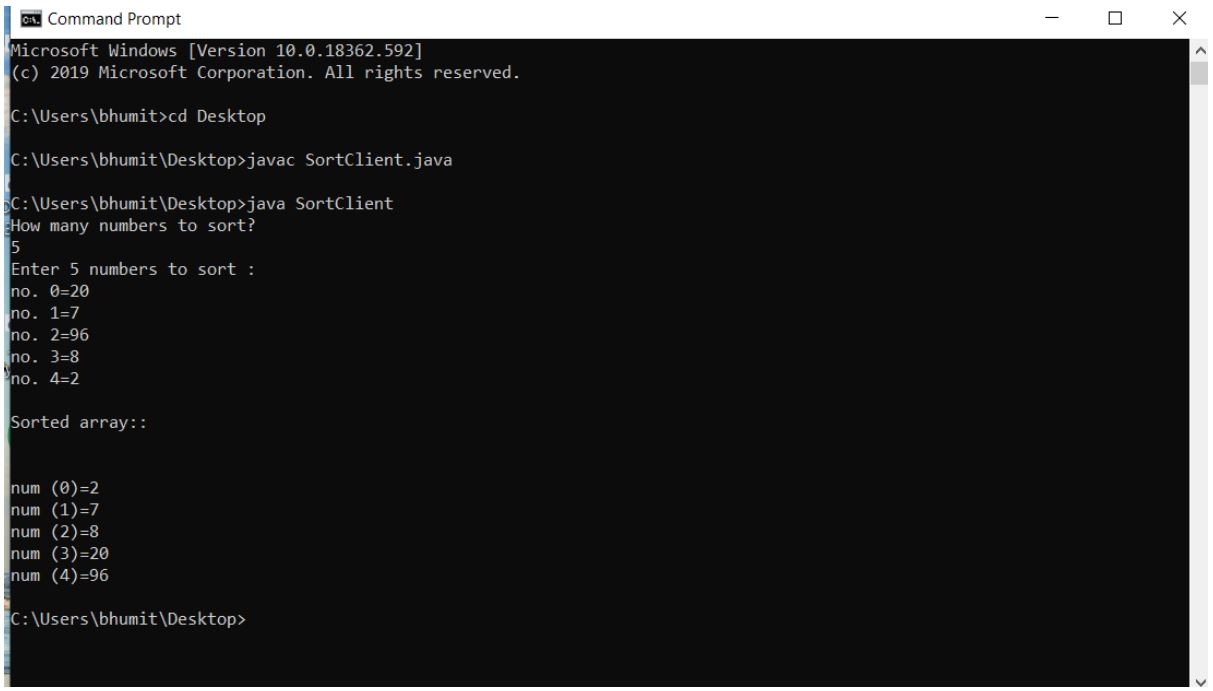
```
        {
           sendarr+="\nnum ("+c+")="+arr[c];
        }
        System.out.println(sendarr);
        p.println(sendarr);
        p.flush();
        s.close(); } }
```

- Client:

```
import java.io.*;
import java.net.*;
class SortClient
{
    public static void main(String ar[]) throws Exception
     {
        Socket s=new Socket("localhost",12345);
        PrintWriter p=new PrintWriter(s.getOutputStream());
BufferedReader in=newBufferedReader(newInputStreamReader(s.getInputStream()));
       BufferedReader ink=new BufferedReader(new InputStreamReader(System.in));
        System.out.println("How many numbers to sort? ");
        int num=Integer.parseInt(ink.readLine());
        p.println(num);
        p.flush();
        System.out.println("Enter "+num+" numbers to sort :");
        String sarr[]=new String[num];
        for(int i=0;i<num;i++)
         {
           System.out.print("no. "+i+"=");
           sarr[i]=ink.readLine();
           p.println(sarr[i]);
           p.flush();
         }
        String res;
        System.out.println("\nSorted array::\n");
        while((res=in.readLine())!=null)
         {   System.out.println(res);   }
        s.close();     }  }
```

OUTPUT:


Command Prompt
Microsoft Windows [Version 10.0.18362.592]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\bhumit>cd Desktop
C:\Users\bhumit\Desktop>javac SortServer.java
C:\Users\bhumit\Desktop>java SortServer
Server Started
Client want to sort 5 numbers
received numbers::
no. 0=20
no. 1=7
no. 2=96
no. 3=8
no. 4=2
Sorted list of numbers
num (0)=2
num (1)=7
num (2)=8
num (3)=20
num (4)=96
C:\Users\bhumit\Desktop>


Command Prompt
Microsoft Windows [Version 10.0.18362.592]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\bhumit>cd Desktop
C:\Users\bhumit\Desktop>javac SortClient.java
C:\Users\bhumit\Desktop>java SortClient
How many numbers to sort?
5
Enter 5 numbers to sort :
no. 0=20
no. 1=7
no. 2=96
no. 3=8
no. 4=2
Sorted array::
num (0)=2
num (1)=7
num (2)=8
num (3)=20
num (4)=96
C:\Users\bhumit\Desktop>