

PRACTICAL-6

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.

Code:

File: SortClient.java

```
package sort;
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=new BufferedReader(new InputStreamReader(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();
    }
}
```

File: SortServer.java

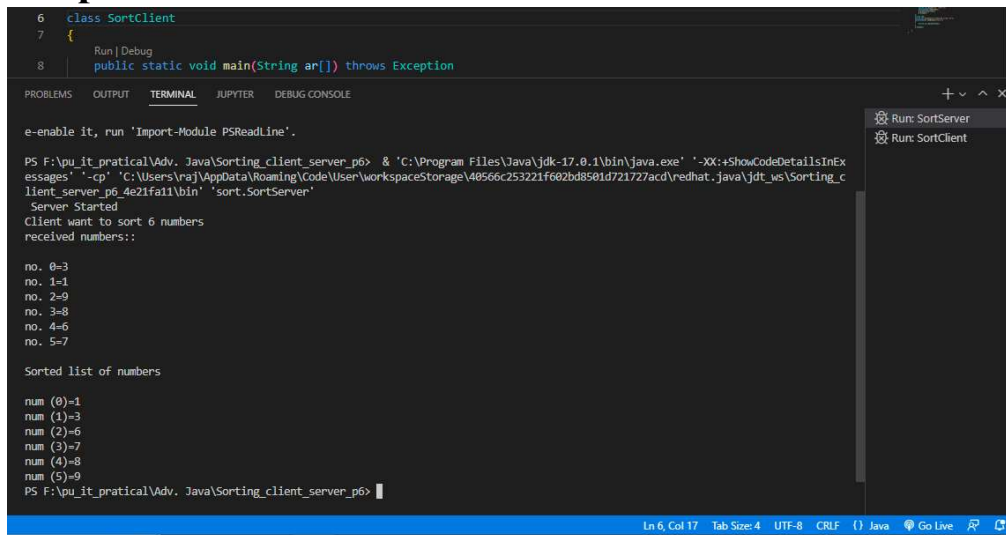
```
package sort;
import java.io.*;
import java.net.*;
class SortServer
{
    public static void main(String ar[]) throws Exception
    {
        ServerSocket s1=new ServerSocket(12345);
        System.out.println(" Server Started");
        Socket s=s1.accept();
        PrintWriter p=new PrintWriter(s.getOutputStream());
        BufferedReader in=new BufferedReader(new
        InputStreamReader(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;
                }
            }
        }

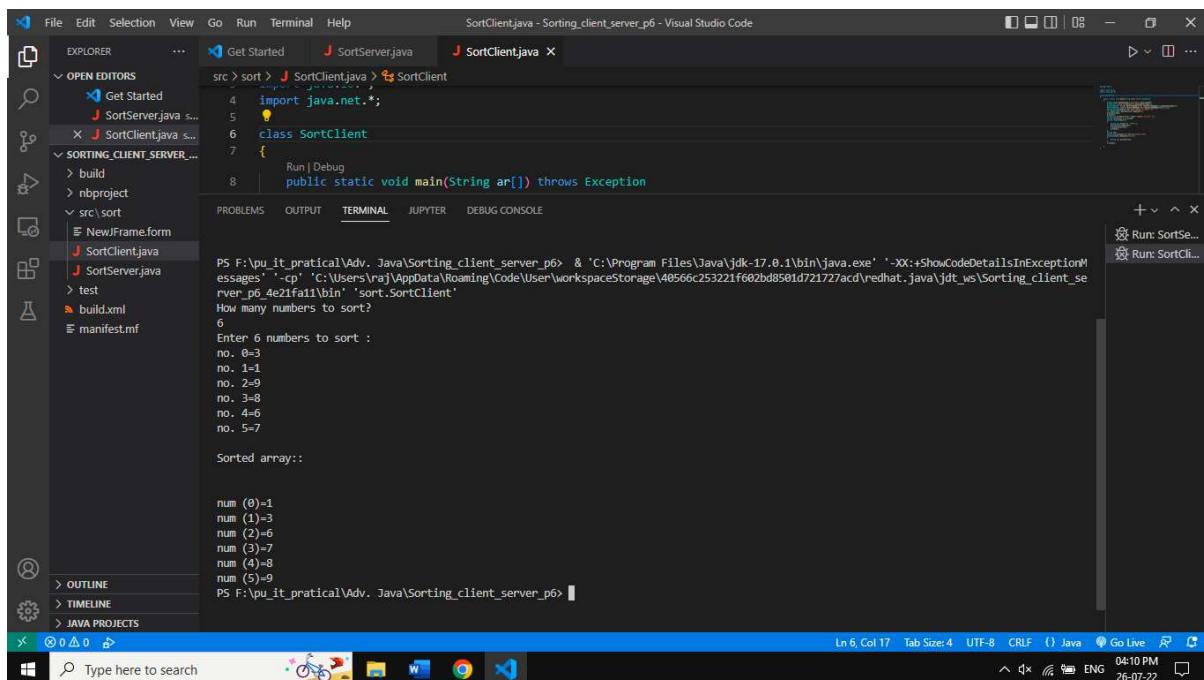
        System.out.println("\nSorted list of numbers");
    }
}
```

```
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();
} }
```

Output:



```
6 class SortClient
7 {
8     public static void main(String ar[]) throws Exception
9     {
10        e-enable it, run 'Import-Module PSReadLine'.
11
12        PS F:\pu_it_practical\Adv. Java\Sorting_client_server_p6> & 'C:\Program Files\Java\jdk-17.0.1\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\raj\AppData\Roaming\Code\User\workspaceStorage\48566c253221f602bd8501d721727acd\redhat.java\jdt_ws\Sorting_client_server_p6_4e21fa11\bin' 'sort.SortServer'
13
14        Server Started
15        Client want to sort 6 numbers
16        received numbers::
17
18        no. 0=3
19        no. 1=1
20        no. 2=9
21        no. 3=8
22        no. 4=6
23        no. 5=7
24
25        Sorted list of numbers
26
27        num (0)=1
28        num (1)=3
29        num (2)=6
30        num (3)=7
31        num (4)=8
32        num (5)=9
33
34        PS F:\pu_it_practical\Adv. Java\Sorting_client_server_p6>
```



```
SortClient.java - Sorting_client_server_p6 - Visual Studio Code
src > sort > SortClient.java > SortClient
4 import java.net.*;
5
6 class SortClient
7 {
8     public static void main(String ar[]) throws Exception
9     {
10        e-enable it, run 'Import-Module PSReadLine'.
11
12        PS F:\pu_it_practical\Adv. Java\Sorting_client_server_p6> & 'C:\Program Files\Java\jdk-17.0.1\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\raj\AppData\Roaming\Code\User\workspaceStorage\48566c253221f602bd8501d721727acd\redhat.java\jdt_ws\Sorting_client_server_p6_4e21fa11\bin' 'sort.SortClient'
13
14        How many numbers to sort?
15        6
16        Enter 6 numbers to sort :
17
18        no. 0=3
19        no. 1=1
20        no. 2=9
21        no. 3=8
22        no. 4=6
23        no. 5=7
24
25        Sorted array::
26
27        num (0)=1
28        num (1)=3
29        num (2)=6
30        num (3)=7
31        num (4)=8
32        num (5)=9
33
34        PS F:\pu_it_practical\Adv. Java\Sorting_client_server_p6>
```