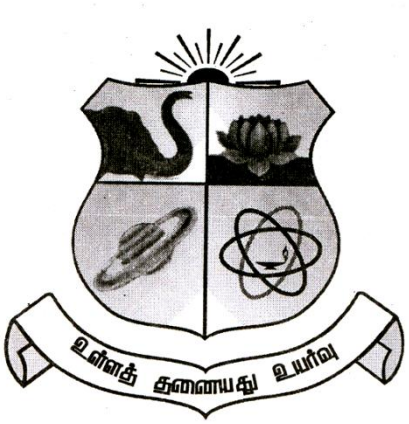
# ARIGNAR ANNA GOVERNMENT ARTS AND SCIENCE COLLEGE

# KARAIKAL – 609605




## Computer Networks Lab - Record

## Dec 2023

## III-Semester

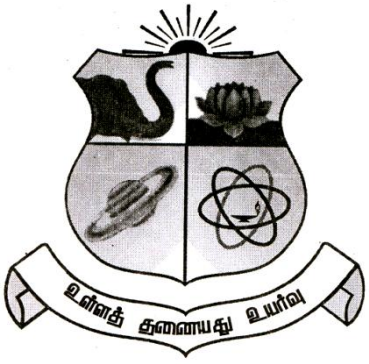
**Name :**_____

**Reg. No. :**_____

## DEPARTMENT OF COMPUTER SCIENCE

## AAGASC - KARAIKAL

# ARIGNAR ANNA GOVERNMENT ARTS AND SCIENCE COLLEGE, KARAIKAL-609605




**DEPARTMENT OF COMPUTER SCIENCE**

**Certified that this is the bonafide record of practical work done by Mr. / Miss ……. Reg. No. ..... of Third Year B.Sc. Computer Science during the III-Semester in the academic year 2023-2024.**

**STAFF IN CHARGE** **HEAD OF THE DEPARTMENT**

**Submitted for the University Examination held on ……..…….**

**EXTERNAL EXAMINER** **INTERNAL EXAMINER**

**CONTENTS**

// Ex. No. 1
Aim : To find IP address of the Local Host Computers

// <<<<<<<<<<<<<<<< Find IP address of Local Host >>>>>>>>>>>

```
import java.net.*;
public class Find {
   public static void main(String[] args) throws UnknownHostException {
      InetAddress localHost = InetAddress.getLocalHost();
      System.out.println(localHost.getHostAddress());

   }
}
```

**Output**

192.168.56.1

// Ex. No. 2

Aim : To develop simple code to send message to server using Socket object

## Socket Programming

Java Socket programming is used for communication between the applications running on different JRE.

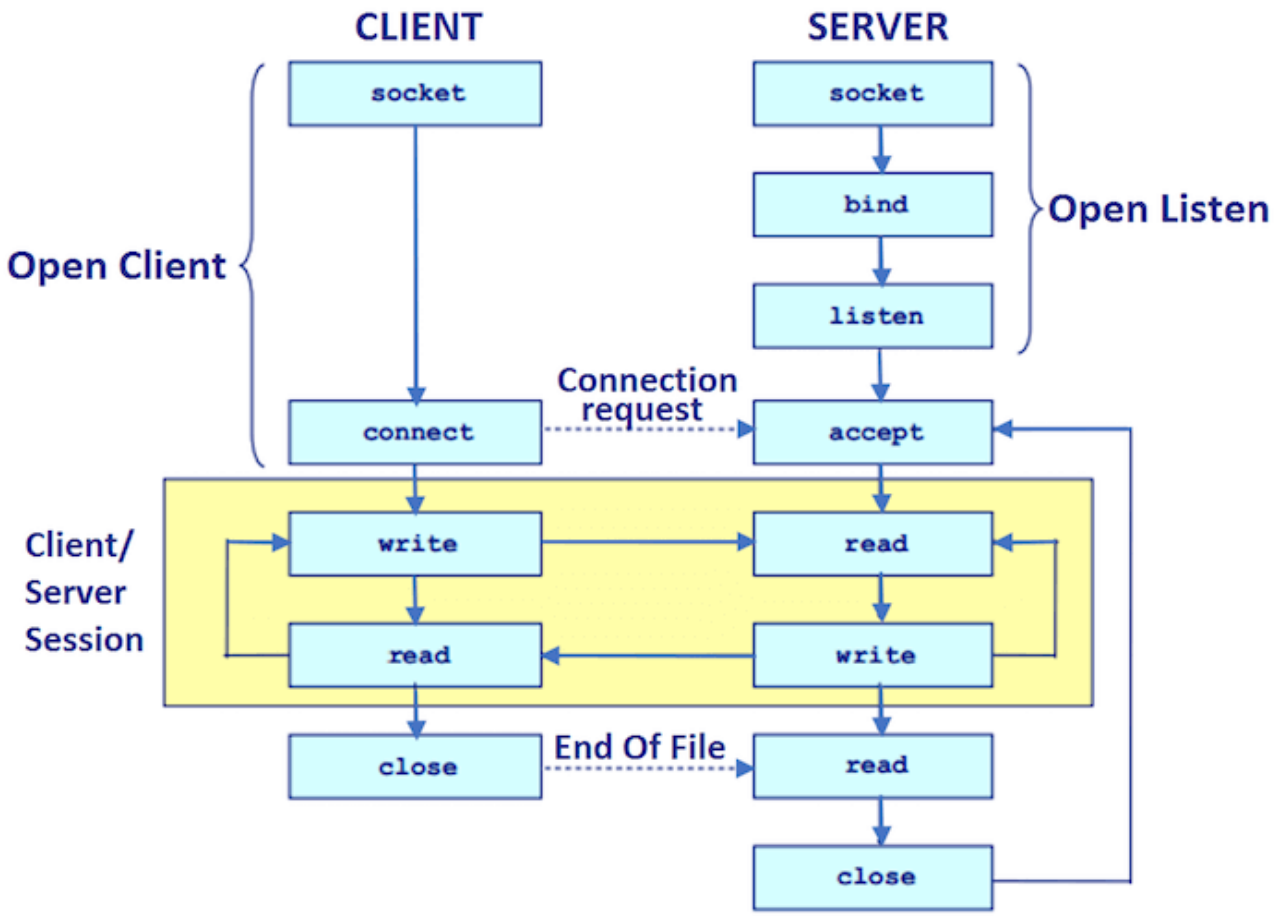
Java Socket programming can be connection-oriented or connection-less.

Socket and ServerSocket classes are used for connection-oriented socket programming and DatagramSocket and DatagramPacket classes are used for connection-less socket programming.

The client in socket programming must know two information:

1. IP Address of Server, and
2. Port number.

Here, we are going to make one-way client and server communication. In this application, client sends a message to the server, server reads the message and prints it. Here, two classes are being used: Socket and ServerSocket. The Socket class is used to communicate client and server. Through this class, we can read and write message. The ServerSocket class is used at server-side. The accept() method of ServerSocket class blocks the console until the client is connected. After the successful connection of client, it returns the instance of Socket at server-side.


CLIENT
SERVER
socket
socket
bind
listen
Open Client
Open Listen
Connection request
connect
accept
Client/ Server Session
write
read
read
write
close
End Of File
read
close

SOCKET API

```
// $$$$$$$$$$$$$$$$$$$$ MyServer.Java   $$$$$$$$$$$$$$$$$$
import java.io.*;
import java.net.*;
public class MyServer {
public static void main(String[] args){
try{
        ServerSocket ss=new ServerSocket(6666);
        System.out.println("Server Started...");
        Socket s=ss.accept();
        DataInputStream dis=new DataInputStream(s.getInputStream());
        String  str=(String)dis.readUTF();
        System.out.println("message= "+str);
        ss.close();
}catch(Exception e)
{
        System.out.println(e.getMessage());
}
}
}
```

```
// $$$$$$$$$$$$$$$$$$$$ MyClient.Java   $$$$$$$$$$$$$$$$$$
import java.io.*;
import java.net.*;
public class MyClient {
public static void main(String[] args) {
try{
        Socket s=new Socket("localhost",6666);
        DataOutputStream dout=new DataOutputStream(s.getOutputStream());
        dout.writeUTF("Hello Server");
        System.out.println("Client message sent to server");
        dout.flush();
        dout.close();
        s.close();
    }catch(Exception e)     {
        System.out.println(e.getMessage() );
        }
  }
}
```

Output:

Server Output 1:

Server Started...

Client Output

Client message sent to server

Server Output 2:

Server Started...

message= Hello Server

Ex. No.: 3

Aim : To develop Java code to find host, port and protocol for given URL.

```
// $$$$$$$$$$$$$$$$$$$$ Web.Java   $$$$$$$$$$$$$$$$$$

import java.lang.* ;
import java.io.*;
import java.net.*;
class Web
 {
 public static void main(String args []) throws MalformedURLException
 { URL url = new URL("http://www.aagasc.edu.in");
 try
 {
 System.out.println("host name is " + url.getHost());
 System.out.println("port no. is " + url.getPort());
 System.out.println("protocol used is " + url.getProtocol());
 }
 catch (Exception e)
 {
        System.out.println("error"+e);
 }
 }
 }
```

Output:

host name is www.aagasc.edu.in

port no. is -1

protocol used is http

Ex.No.: 4:

Aim : To develop java code to display what are the port running on local host.

```
// $$$$$$$$$$$$$$$$$$$$ LocalPort.Java   $$$$$$$$$$$$$$$$$$

import java.net.*;
import java.io.*;
public class LocalPort
{
public static void main(String args[])
{
for(int port=1024;port<=65535;port++)
{
try
{
ServerSocket server=new ServerSocket(port);
}
catch(IOException e)
{
System.out.println("There is a server on port"+port);
}
}
}
}
```

## Output

```
There is a server on port2968
There is a server on port7070
There is a server on port49152
There is a server on port49153
There is a server on port49154
There is a server on port49157
There is a server on port49159
There is a server on port49166
There is a server on port49170
There is a server on port52081
There is a server on port52083
There is a server on port52089
There is a server on port52092
There is a server on port52100
There is a server on port52102
There is a server on port52734
There is a server on port54502
There is a server on port54530
There is a server on port56873
There is a server on port56955
There is a server on port56994
There is a server on port60636
```

Ex.No.: 5

Aim : To develop Java code to display source code of given URL

```
// $$$$$$$$$$$$$$$$$$$$ LocalPort.Java   $$$$$$$$$$$$$$$$$$

import java.lang.*;
import java.io.*;
import java.net.*;
class ReadURL
{
public static void main(String args[]) throws Exception
{
try
{URL url=new URL("http://www.aagasc.edu.in/prog.php");
URLConnection urlcon=url.openConnection();
InputStream ip=urlcon.getInputStream();
boolean flag=true;
while(flag)
{int a=ip.read();
if(a==-1)
{flag=false;
}
else
{
char c=(char)a;
System.out.print(c);
}
}
ip.close();
}
catch(Exception e)
{
System.out.println("error"+e);
}
}
```

Output

```
<h2>Arignar Anna Govt. Arts and Science College, Karaikal</h2>
<big>
<a href="https://www.youtube.com/watch?v=N52kzy6Dt2w">Drive in the correct gear Keep your foot off the clutch when not changing gears</a><br><br>
<a href="https://www.youtube.com/watch?v=3tQzhmTsx1c">Install a solar water or solar cooker heater on rooftops</a><br><br>
<a href="https://www.youtube.com/watch?v=nLERneTm_Og">Keeping AC above 24 degree Celsius</a><br><br>
<a href="https://www.youtube.com/watch?v=sFU-8k0QrJs">Switch off appliances from plug points when not in use</a><br><br>
<a href="https://www.youtube.com/watch?v=mmEDQMP3Nm8">Pressure cooker</a><br><br>
<a href="https://www.youtube.com/watch?v=niTmSAA3osw">Keep your electronic devices in energy saving mode</a><br><br>
<a href="https://www.youtube.com/watch?v=SFVwMnXE1YI">USE SMART SWITCHES FOR APPLICANCES THAT ARE USED FREQUENTLY</a><br><br>
<a href="https://www.youtube.com/watch?v=-slRU2txKkc">Install community earthen pots for cooling water Innovation Hub DSTE Puducherry</a><br><br>
<a href="https://www.youtube.com/watch?v=dvf1x-iq5fA">Defrost fridge or freezer regularly</a><br><br>
<a href="https://www.youtube.com/watch?v=b2ilaM-W7iE">Run outdoors instead of on a tread mill</a><br><br>
</big>
```