CSE3011 NETWORK PROGRAMMING

LAB EXPERIMENT 4

NAME – B PRATYUSH

REGISTRATION NUMBER – 19BCN7114

LAB SLOT – L1+L2

FACULTY – PROF. MUNEESWARI

Experiment Description: IP Characteristics and URL Content Extraction

CODE 1

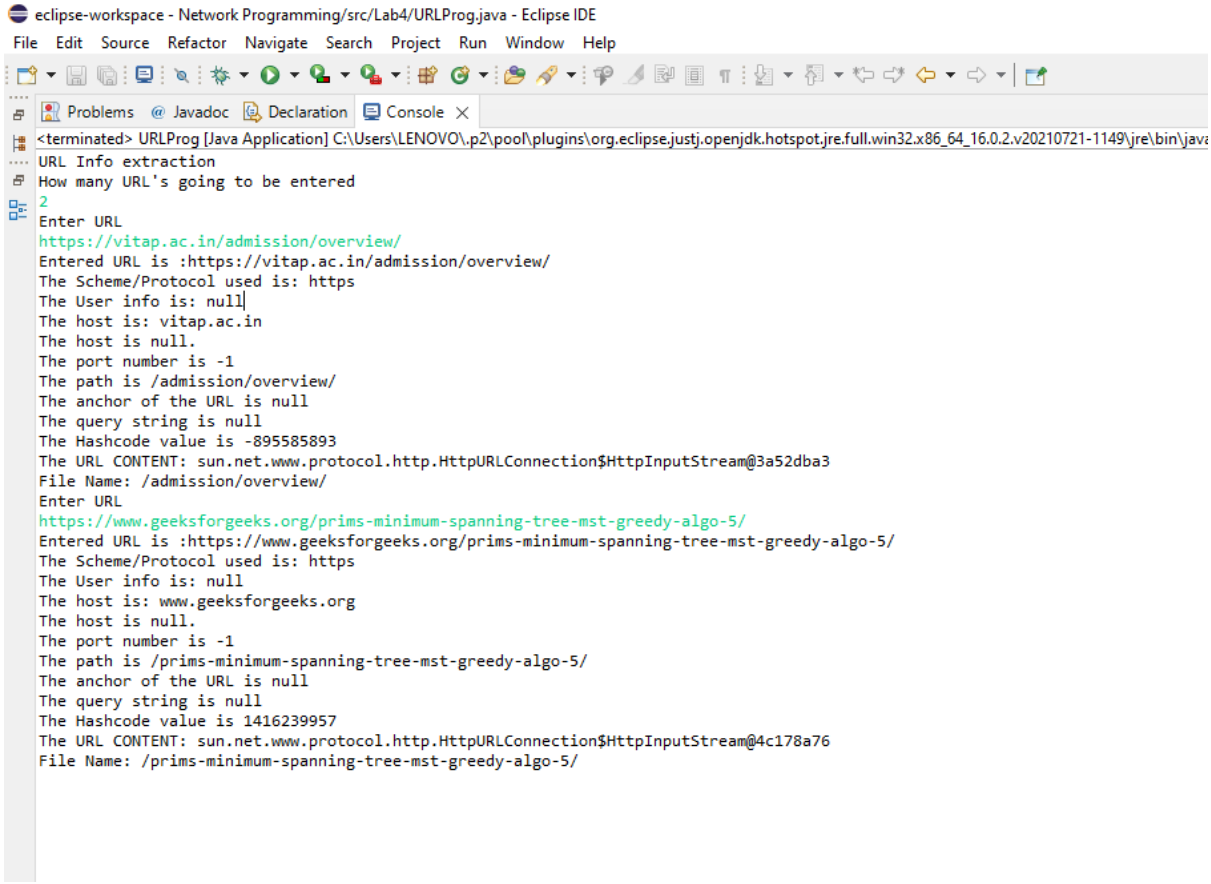
URLProg.java

```
package Lab4;
import java.net.*;
import java.util.*;
import java.io.*;
public class URLProg {

        public static void main(String[] args) {
                // TODO Auto-generated method stub

         System.out.println("URL Info extraction");
         System.out.println("How many URL's going to be entered");
         Scanner sin=new Scanner(System.in);
         int n=sin.nextInt();
         for(int i=0;i<n;i++)
         {
```

```
            try
    {
         System.out.println("Enter URL");
              String urlin = sin.next();
              URL u =new URL(urlin);
              System.out.println("Entered URL is :"+u);
              System.out.println("The Scheme/Protocol used is:
"+u.getProtocol());
              System.out.println("The User info is: "+u.getUserInfo());
              String host = u.getHost();
              System.out.println("The host is: "+host);
              int atSign = host.indexOf('@');
              if (atSign != -1)
              {
        host = host.substring(atSign+1);
               System.out.println("The host is " + host);
              }
                 else
                 {
               System.out.println("The host is null.");
              }
              System.out.println("The port number is " + u.getPort());
              System.out.println("The path is " + u.getPath());
              System.out.println("The anchor of the URL is " + u.getRef());
              System.out.println("The query string is " + u.getQuery());
              System.out.println("The Hashcode value is " + u.hashCode());
              System.out.println("The URL CONTENT: "+u.getContent());
```

```
                System.out.println("File Name: "+u.getFile());



        }
       catch(MalformedURLException e)
       {
            System.out.println("Cannot understand the entered URL");
         System.out.println(e);
       }
                catch(IOException e)
                {
                        System.out.println(e);
                }
          }
          sin.close();



        }

}
```

Output



Code 2

IPCharac.java

```
package Lab4;


import java.net.InetAddress;

import java.net.*;

import java.util.Scanner;

import java.io.*;


public class IPCharac {
```

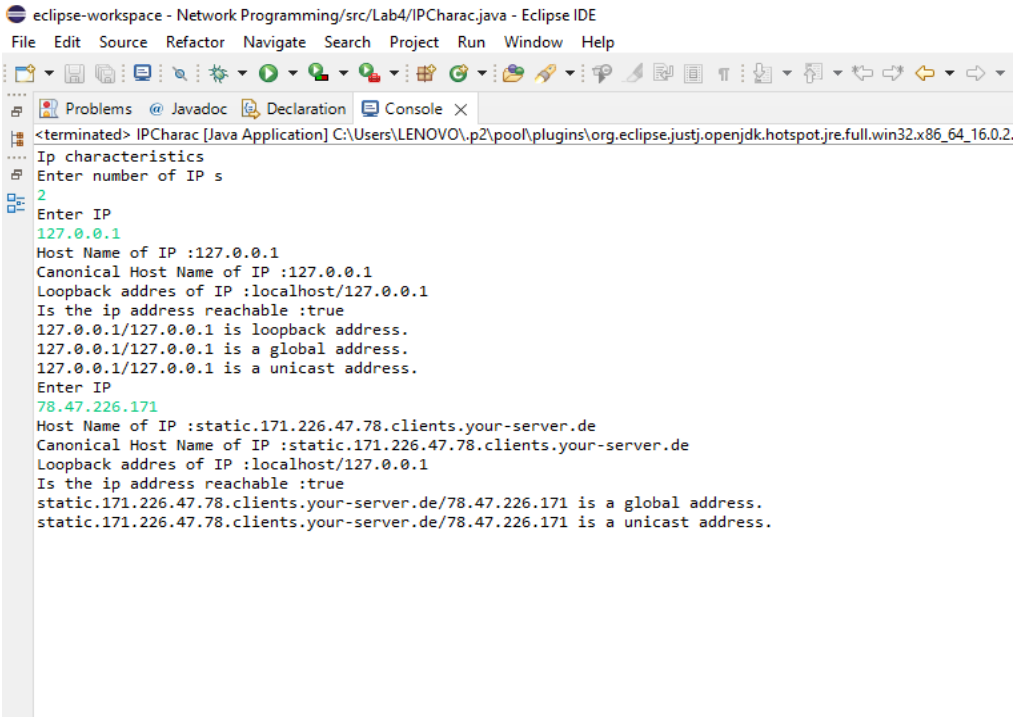
```
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		 System.out.println("Ip characteristics");
		 System.out.println("Enter number of IP s");
		 Scanner sin=new Scanner(System.in);
		 int n=sin.nextInt();
		for(int i=0;i<n;i++)
		 {
			try
		{
			System.out.println("Enter IP");
				String ipadd = sin.next();
				InetAddress address = InetAddress.getByName(ipadd);
				System.out.println("Host Name of IP
:"+address.getHostName());
				System.out.println("Canonical Host Name of IP
:"+address.getCanonicalHostName());
				System.out.println("Loopback addres of IP
:"+address.getLoopbackAddress());
				System.out.println("Is the ip address reachable
:"+address.isReachable(300));

				 if (address.isAnyLocalAddress())
				 {
					 System.out.println(address + " is a wildcard
address");
				 }
				 if (address.isLoopbackAddress())
```

```
                                {
                                 System.out.println(address + " is loopback
address.");
                                 }
                                 if (address.isLinkLocalAddress()) {
                                 System.out.println(address + " is a link-local
address.");
                                 }
                                 else if (address.isSiteLocalAddress())
                                 {
                                 System.out.println(address + " is a site-local
address.");
                                 }
                                 else
                                 {
                                 System.out.println(address + " is a global address.");
                                 }
                                 if (address.isMulticastAddress())
                                 {
                                  if (address.isMCGlobal())
                                  {
                                  System.out.println(address + " is a global multicast
address.");
                                  }
                                  else if (address.isMCOrgLocal())
                                  {
                                   System.out.println(address + " is an organization
wide multicast address.");
```

```
                                }
                                else if (address.isMCSiteLocal())
                                {
                                 System.out.println(address + " is a site wide
multicast address.");
                                }
                                else if (address.isMCLinkLocal())
                                {
                                  System.out.println(address + " is a subnet wide
multicast address.");
                                }
                                else if (address.isMCNodeLocal())
                                {
                                        System.out.println(address+ " is an interface-
local multicast address.");
                                }
                                else
                                {
                                   System.out.println(address + " is an unknown
multicast address type.");
                                 }
                               }
                               else
                               {
                                   System.out.println(address + " is a unicast
address.");
                               }
```

```
            }
            catch(UnknownHostException e)
            {
                System.out.println("Cannot understand the entered IP");
              System.out.println(e);
            }
                    catch(IOException e)
                    {
                            System.out.println(e);
                    }
               }
              sin.close();
        }

}
```

Output



Code 3

IPUrlProg.java

```
package Lab4;
import java.net.*;
import java.util.*;
import java.io.*;
public class IPUrlProg {
  public static void main(String args[]) {
            System.out.println("URL and IP Info extraction");
                System.out.println("Enter number of url addresses");
                Scanner sin=new Scanner(System.in);
                int n=sin.nextInt();

                    for(int i=0;i<n;i++)
                     {
                            try
                   {
                       System.out.println("Enter IP");
                             String url = sin.next();
                             URL u = new URL(url);
                       System.out.println("Entered URL is :"+u);
                     System.out.println("The Scheme/Protocol used is: "+u.getProtocol());
                     System.out.println("The User info is: "+u.getUserInfo());
                     String host = u.getHost();
                     System.out.println("The host is: "+host);
                     int atSign = host.indexOf('@');
                     if (atSign != -1)
                     {
                  host = host.substring(atSign+1);
```

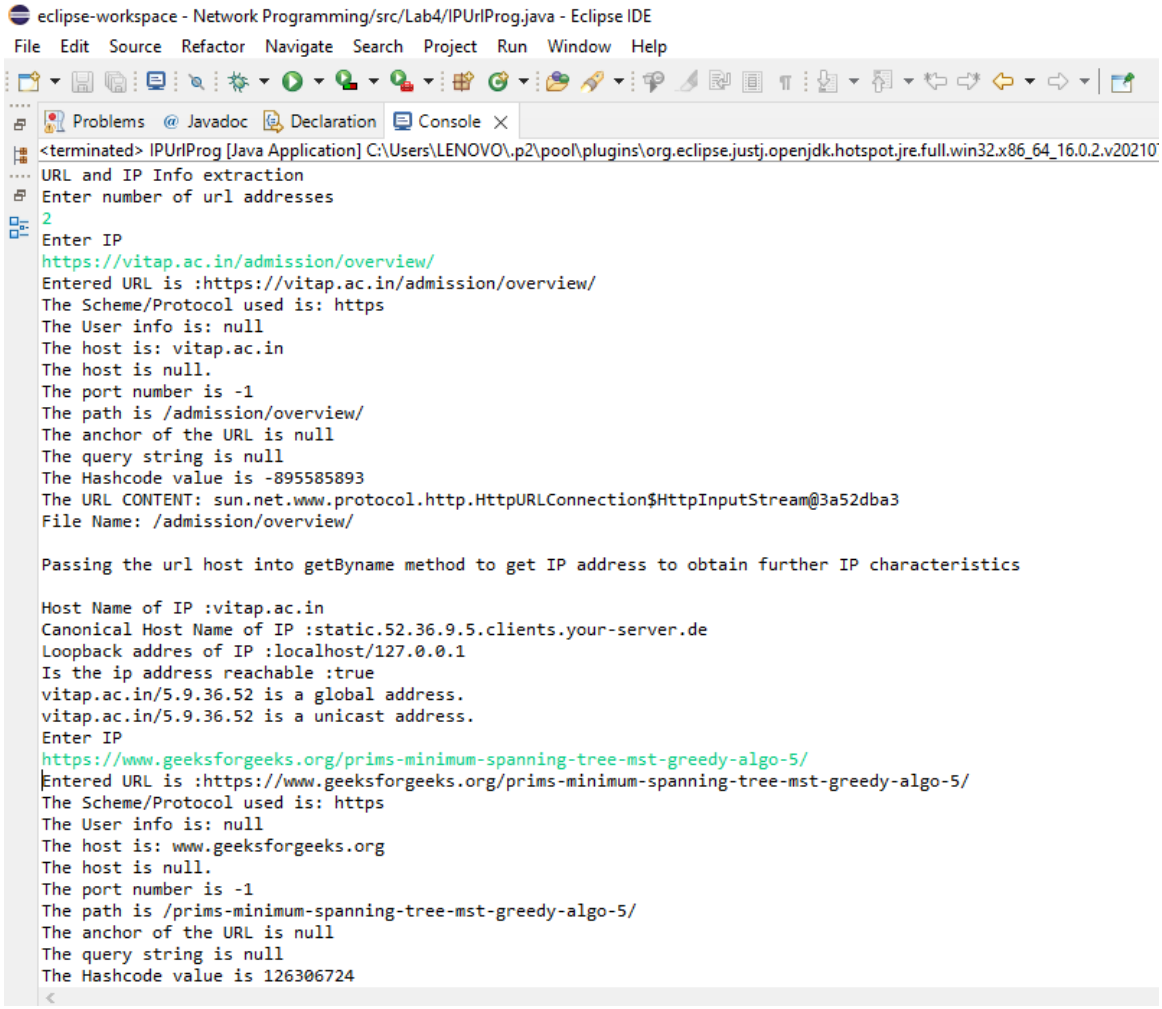
```
  System.out.println("The host is " + host);
 }
    else
    {
  System.out.println("The host is null.");
 }

 System.out.println("The port number is " + u.getPort());
 System.out.println("The path is " + u.getPath());
 System.out.println("The anchor of the URL is " + u.getRef());
 System.out.println("The query string is " + u.getQuery());
 System.out.println("The Hashcode value is " + u.hashCode());
 System.out.println("The URL CONTENT: "+u.getContent());
 System.out.println("File Name: "+u.getFile());
 System.out.println();

 System.out.println("Passing the url host into getByname method to
get IP address to obtain further IP characteristics");

 System.out.println();

        InetAddress address = InetAddress.getByName(host);
        System.out.println("Host Name of IP
:"+address.getHostName());
        System.out.println("Canonical Host Name of IP
:"+address.getCanonicalHostName());
        System.out.println("Loopback addres of IP
:"+address.getLoopbackAddress());
        System.out.println("Is the ip address reachable
:"+address.isReachable(300));
```

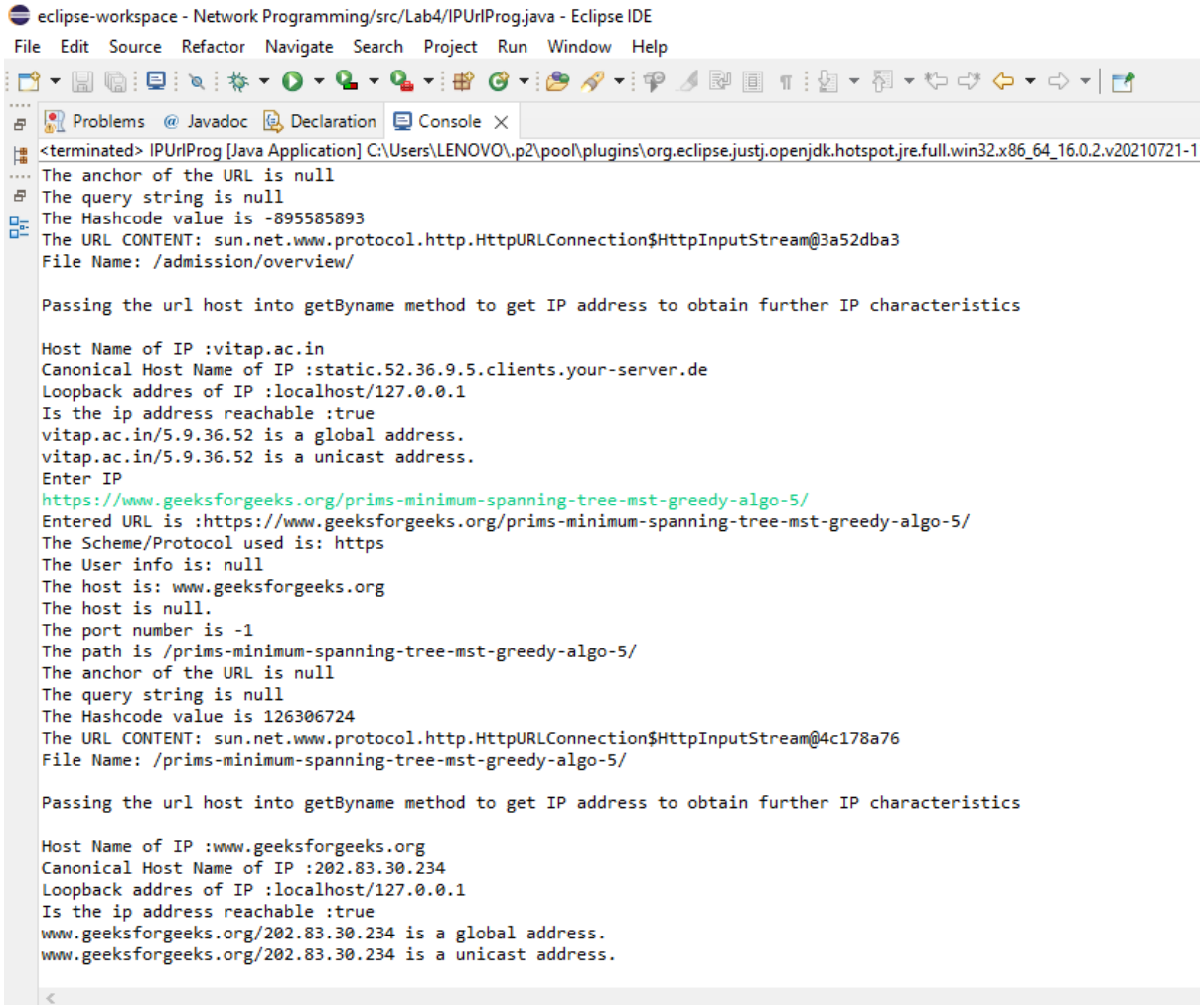
```
                    if (address.isAnyLocalAddress())
                        {
                            System.out.println(address + " is a wildcard
address");
                            }
                            if (address.isLoopbackAddress())
                            {
                            System.out.println(address + " is loopback
address.");
                            }
                            if (address.isLinkLocalAddress()) {
                            System.out.println(address + " is a link-local
address.");
                            }
                            else if (address.isSiteLocalAddress())
                            {
                            System.out.println(address + " is a site-local
address.");
                            }
                            else
                            {
                            System.out.println(address + " is a global
address.");
                            }
                            if (address.isMulticastAddress())
                            {
```

```
if (address.isMCGlobal())
{
System.out.println(address + " is a global multicast address.");
}
else if (address.isMCOrgLocal())
{
 System.out.println(address + " is an organization wide multicast address.");
}
else if (address.isMCSiteLocal())
{
 System.out.println(address + " is a site wide multicast address.");
}
else if (address.isMCLinkLocal())
{
  System.out.println(address + " is a subnet wide multicast address.");
}
else if (address.isMCNodeLocal())
{
        System.out.println(address+ " is an interface-local multicast address.");
}
else
{
   System.out.println(address + " is an unknown multicast address type.");
 }
}
```

```
                                                    else
                                                    {
                                                        System.out.println(address + " is a unicast
address.");
                                                    }
                         }


                                    catch(MalformedURLException e)
                        {
                              System.out.println("Cannot understand the entered URL");
                            System.out.println(e);
                        }
                                    catch(IOException e)
                                    {
                                            System.out.println(e);
                                    }


                    }
                            sin.close();
   }
}
```

Output


eclipse-workspace - Network Programming/src/Lab4/IPUrlProg.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> IPUrlProg [Java Application] C:\Users\LENOVO\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210
URL and IP Info extraction
Enter number of url addresses
2
Enter IP
https://vitap.ac.in/admission/overview/
Entered URL is :https://vitap.ac.in/admission/overview/
The Scheme/Protocol used is: https
The User info is: null
The host is: vitap.ac.in
The host is null.
The port number is -1
The path is /admission/overview/
The anchor of the URL is null
The query string is null
The Hashcode value is -895585893
The URL CONTENT: sun.net.www.protocol.http.HttpURLConnection$HttpInputStream@3a52dba3
File Name: /admission/overview/
Passing the url host into getByname method to get IP address to obtain further IP characteristics
Host Name of IP :vitap.ac.in
Canonical Host Name of IP :static.52.36.9.5.clients.your-server.de
Loopback addres of IP :localhost/127.0.0.1
Is the ip address reachable :true
vitap.ac.in/5.9.36.52 is a global address.
vitap.ac.in/5.9.36.52 is a unicast address.
Enter IP
https://www.geeksforgeeks.org/prims-minimum-spanning-tree-mst-greedy-algo-5/
Entered URL is :https://www.geeksforgeeks.org/prims-minimum-spanning-tree-mst-greedy-algo-5/
The Scheme/Protocol used is: https
The User info is: null
The host is: www.geeksforgeeks.org
The host is null.
The port number is -1
The path is /prims-minimum-spanning-tree-mst-greedy-algo-5/
The anchor of the URL is null
The query string is null
The Hashcode value is 126306724


eclipse-workspace - Network Programming/src/Lab4/IPUrlProg.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> IPUrlProg [Java Application] C:\Users\LENOVO\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1
The anchor of the URL is null
The query string is null
The Hashcode value is -895585893
The URL CONTENT: sun.net.www.protocol.http.HttpURLConnection$HttpInputStream@3a52dba3
File Name: /admission/overview/
Passing the url host into getByname method to get IP address to obtain further IP characteristics
Host Name of IP :vitap.ac.in
Canonical Host Name of IP :static.52.36.9.5.clients.your-server.de
Loopback addres of IP :localhost/127.0.0.1
Is the ip address reachable :true
vitap.ac.in/5.9.36.52 is a global address.
vitap.ac.in/5.9.36.52 is a unicast address.
Enter IP
https://www.geeksforgeeks.org/prims-minimum-spanning-tree-mst-greedy-algo-5/
Entered URL is :https://www.geeksforgeeks.org/prims-minimum-spanning-tree-mst-greedy-algo-5/
The Scheme/Protocol used is: https
The User info is: null
The host is: www.geeksforgeeks.org
The host is null.
The port number is -1
The path is /prims-minimum-spanning-tree-mst-greedy-algo-5/
The anchor of the URL is null
The query string is null
The Hashcode value is 126306724
The URL CONTENT: sun.net.www.protocol.http.HttpURLConnection$HttpInputStream@4c178a76
File Name: /prims-minimum-spanning-tree-mst-greedy-algo-5/
Passing the url host into getByname method to get IP address to obtain further IP characteristics
Host Name of IP :www.geeksforgeeks.org
Canonical Host Name of IP :202.83.30.234
Loopback addres of IP :localhost/127.0.0.1
Is the ip address reachable :true
www.geeksforgeeks.org/202.83.30.234 is a global address.
www.geeksforgeeks.org/202.83.30.234 is a unicast address.