

CSE3011 NETWORK PROGRAMMING

LAB EXPERIMENT 8

NAME – B PRATYUSH

REGISTRATION NUMBER – 19BCN7114

LAB SLOT – L11+L12

FACULTY – PROF. MUNEESWARI

Experiment Description: Sample Programs on URL and Ip

CODE 1

Get IP address using Socket Programming

Server Code

GetIPAddress.java

```
import java.net.*;
import java.io.*;
import java.util.*;

public class GetIPAddress{

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

        BufferedReader input = new BufferedReader(new
        InputStreamReader(System.in));

        System.out.print("Enter the host name: ");

        String hostname = input.readLine();

        ServerSocket s=new ServerSocket(8080);

        try {

            InetAddress inetadd = InetAddress.getByName(hostname);

            System.out.println("IP address is: " + inetadd.getHostAddress());
```

```

Socket soc=s.accept();

DataOutputStream out=new DataOutputStream(soc.getOutputStream());

out.writeBytes("Server Date: " + (new Date()).toString() + "\n");

BufferedReader in=new BufferedReader(new
InputStreamReader(soc.getInputStream() ));

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

out.close();

soc.close();

}

catch(UnknownHostException e ){

System.out.println("Could not find IP address for: " + hostname);

}

}

}

```

Client Side

GetIPClient.java

```

import java.net.*;

import java.io.*;

public class GetIPClient {

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

        // TODO Auto-generated method stub

        Socket soc=new Socket("localhost",8080);

        DataInputStream din=new
DataInputStream(soc.getInputStream());

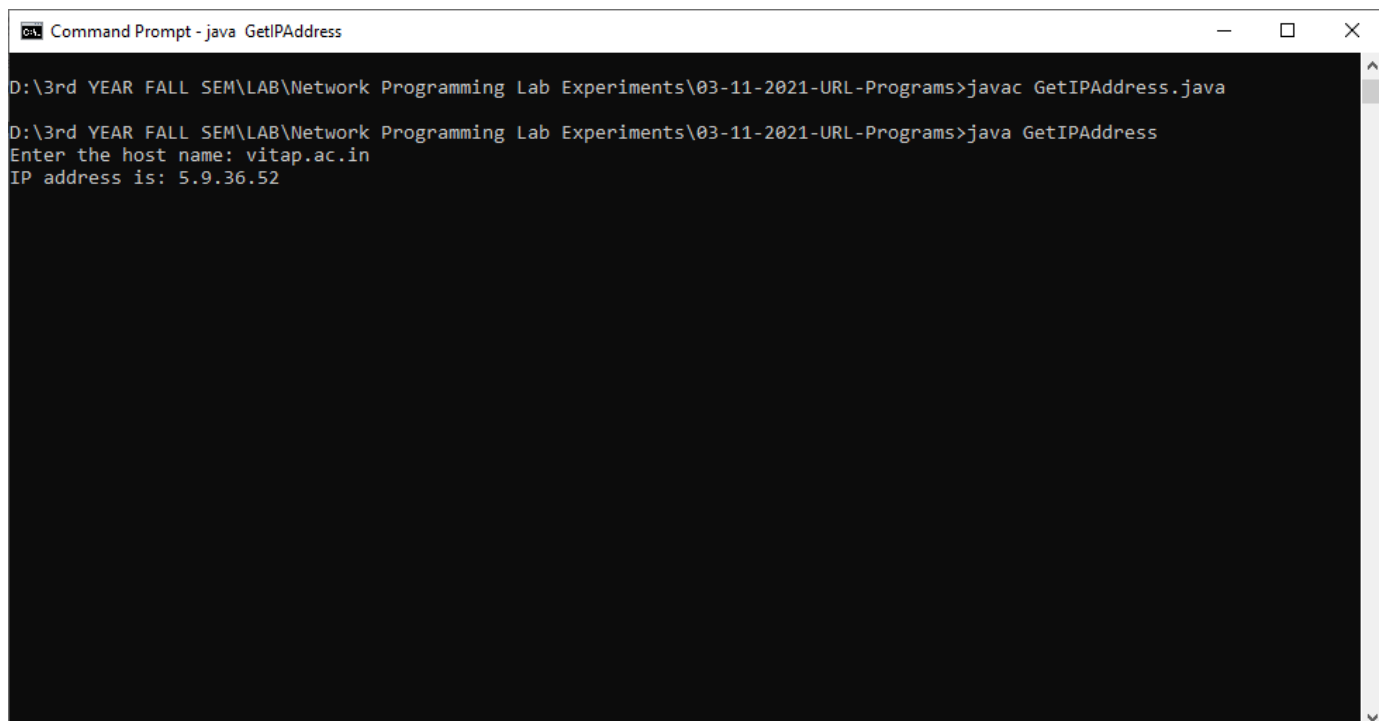
```

```
        BufferedReader br=new BufferedReader(new
InputStreamReader(System.in));

        String str2="";
        while((str2=br.readLine())!=null)
        {
            str2=din.readUTF();
            System.out.println(""+str2);
        }
        soc.close();
    }
}
```

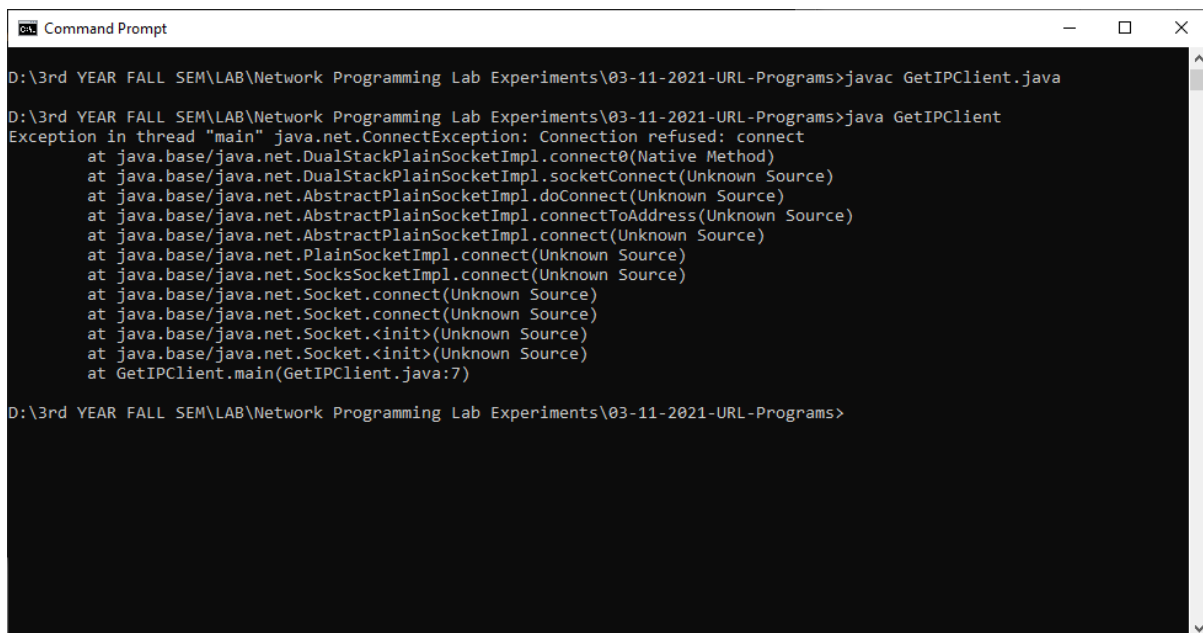
Output:

Server End:



```
Command Prompt - java GetIPAddress
D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\03-11-2021-URL-Programs>javac GetIPAddress.java
D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\03-11-2021-URL-Programs>java GetIPAddress
Enter the host name: vitap.ac.in
IP address is: 5.9.36.52
```

Client End:



```
Command Prompt
D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\03-11-2021-URL-Programs>javac GetIPClient.java
D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\03-11-2021-URL-Programs>java GetIPClient
Exception in thread "main" java.net.ConnectException: Connection refused: connect
    at java.base/java.net.DualStackPlainSocketImpl.connect0(Native Method)
    at java.base/java.net.DualStackPlainSocketImpl.socketConnect(Unknown Source)
    at java.base/java.net.AbstractPlainSocketImpl.doConnect(Unknown Source)
    at java.base/java.net.AbstractPlainSocketImpl.connectToAddress(Unknown Source)
    at java.base/java.net.AbstractPlainSocketImpl.connect(Unknown Source)
    at java.base/java.net.PlainSocketImpl.connect(Unknown Source)
    at java.base/java.net.SocksSocketImpl.connect(Unknown Source)
    at java.base/java.net.Socket.connect(Unknown Source)
    at java.base/java.net.Socket.connect(Unknown Source)
    at java.base/java.net.Socket.<init>(Unknown Source)
    at java.base/java.net.Socket.<init>(Unknown Source)
    at GetIPClient.main(GetIPClient.java:7)
D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\03-11-2021-URL-Programs>
```

Code 2

URLInfo.java

```
package lab8;
import java.net.*;
import java.io.*;
import java.util.Date;
import java.util.*;
public class URLInfo {

    public static void main(String[] args) throws
Exception {
    // TODO Auto-generated method stub
    int c;
    System.out.println("Enter No of Urls");
    Scanner sin=new Scanner(System.in);
    int n=sin.nextInt();
    for(int j=0;j<n;j++) {
        System.out.println("Enter URL "+(j+1)+" :
");
        String u =sin.next();
        URL url = new URL(u);
        URLConnection con = url.openConnection();
```

```

        System.out.println("URL Info");
        System.out.println("Date: " + new
Date(con.getDate()));
        System.out.println("Content-Type: " +
con.getContentType());
        System.out.println("Expires: " +
con.getExpiration());
        System.out.println("Last-Modified: " + new
Date(con.getLastModified()));
        int len = con.getContentLength();
        System.out.println("Content-Length: " +
len);
        System.out.println("Content Encoding:
"+con.getContentEncoding());
        System.out.println("Read Timeout:
"+con.getReadTimeout());
        System.out.println("Header Field:
"+con.getHeaderField(20));
        if (len > 0)
        {
            System.out.println("-----
!!Content!!-----");
            InputStream input = con.getInputStream();
            int i = len;
            while(((c = input.read()) != -1) && (i >
0))
            {
                System.out.print((char) c);
            }
            input.close();
        }
        else
        {
            System.out.println("No Content Available");
        }
    }
    sin.close();
}
}

```

Output:

```
eclipse-workspace - Network Programming/src/lab8/URLInfo.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

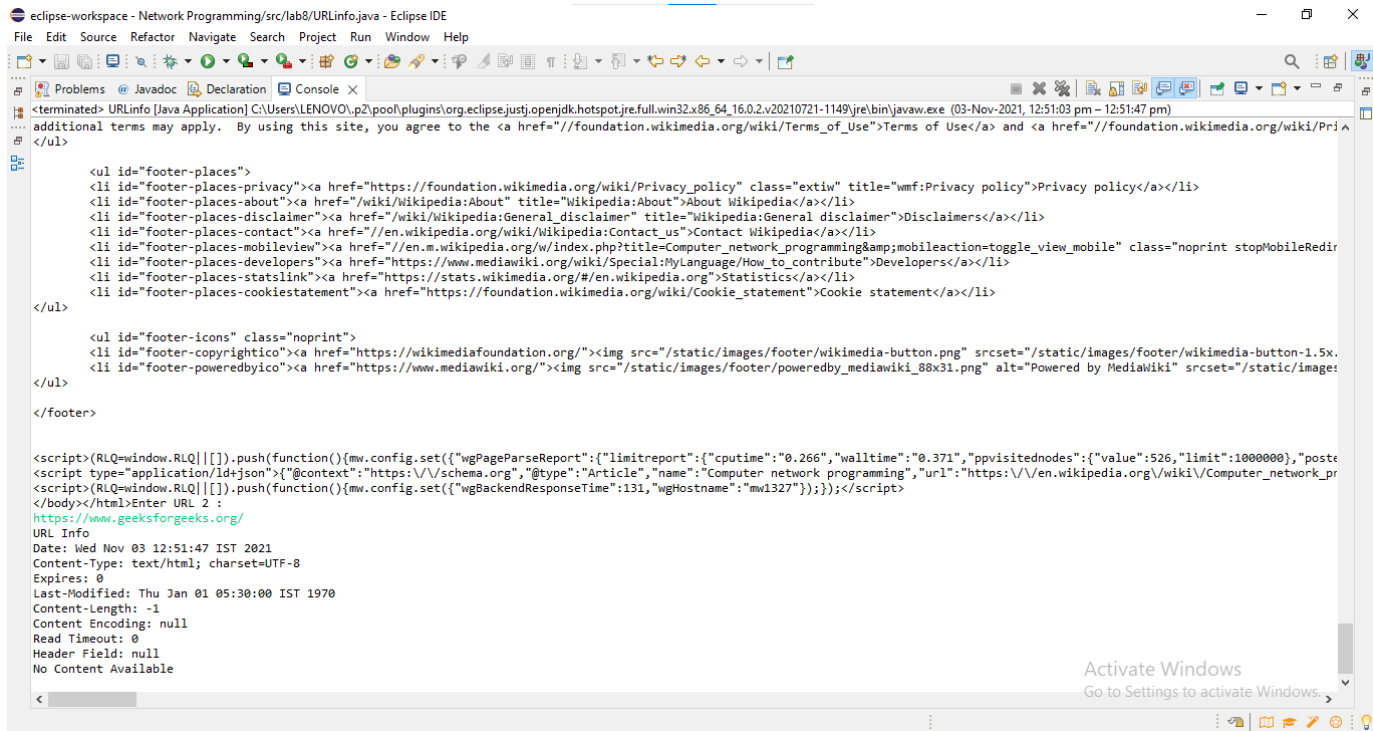
<terminated> URLInfo [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:51:03 pm - 12:51:47 pm)

Enter No of Urls
2
Enter URL 1 :
https://en.wikipedia.org/wiki/Computer_network_programming
URL Info
Date: Wed Nov 03 10:42:30 IST 2021
Content-Type: text/html; charset=UTF-8
Expires: 0
Last-Modified: Wed Nov 03 01:30:46 IST 2021
Content-Length: 42684
Content Encoding: null
Read Timeout: 0
Header Field: private, s-maxage=0, max-age=0, must-revalidate
-----!!Content!!-----
<!DOCTYPE html>
<html class="client-nojs" lang="en" dir="ltr">
<head>
<meta charset="UTF-8"/>
<title>Computer network programming - Wikipedia</title>
<script>document.documentElement.className="client-js";RLCONF={{"wgBreakFrames":1,"wgSeparatorTransformTable":["",""],"wgDigitTransformTable":["",""],"wgDefaultDateFormat":"dmy","wgMonth
"Computer network programming","wgRelevantArticleId":3224769,"wgIsProbablyEditable":10,"wgRelevantPageIsProbablyEditable":10,"wgRestrictionEdit":1,"wgRestrictionMove":1,"wgFlaggedRevsf
ext.globalCssJs.user":"ready","user":"ready","user.options":{"loading","ext.cite.styles":"ready","skins.vector.styles.legacy":"ready","ext.visualEditor.desktopArticleTarget.noscript":"re
<script>(RLQ=window.RLQ||[]).push(function(){mw.loader.implement("user.options@1h3gi",function($,jQuery,require,module){"/@nomin"/mw.user.tokens.set({"patrolToken":"+\\","watchToken":"+\\
}));</script>
<link rel="stylesheet" href="/w/load.php?lang=en&modules=ext.cite.styles%7Cext.uls.interlanguage%7Cext.visualEditor.desktopArticleTarget.noscript%7Cext.wikimediaBadges%7Cskins.vector
<script async="" src="/w/load.php?lang=en&modules=startup&only=scripts&raw=1&skin=vector"></script>
<meta name="ResourceLoaderDynamicStyles" content="">
<link rel="stylesheet" href="/w/load.php?lang=en&modules=site.styles&only=styles&skin=vector"/>
<meta name="generator" content="MediaWiki 1.38.0-wmf.6"/>
<meta name="referrer" content="origin"/>
<meta name="referrer" content="origin-when-crossorigin"/>
<meta name="referrer" content="origin-when-cross-origin"/>
<meta name="format-detection" content="telephone=no"/>
<meta property="og:title" content="Computer network programming - Wikipedia"/>
<meta property="og:type" content="website"/>
<link rel="preconnect" href="//upload.wikimedia.org"/>
<link rel="alternate" media="only screen and (max-width: 720px)" href="//en.m.wikipedia.org/wiki/Computer_network_programming"/>
<link rel="alternate" type="application/x-wiki" title="Edit this page" href="/w/index.php?title=Computer_network_programming&action=edit"/>
</html>
```

```
eclipse-workspace - Network Programming/src/lab8/URLInfo.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> URLInfo [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:51:03 pm - 12:51:47 pm)

<div id="contentSub2"></div>
<div id="jump-to-nav"></div>
<a class="mw-jump-link" href="#mw-head">Jump to navigation</a>
<a class="mw-jump-link" href="#searchInput">Jump to search</a>
<div id="mw-content-text" class="mw-body-content mw-content-ltr" lang="en" dir="ltr"><div class="mw-parser-output"><table class="box-One_source_plainlinks_metadata ambox
<style data-mw-deduplicate="TemplateStyles:1033289096">.mw-parser-output .hatnote(font-style:italic).mw-parser-output div.hatnote(padding-left:1.6em;margin-bottom:0.5em).mw-parser-outp
<p><b>Computer network programming</b> involves writing <a href="/wiki/Computer_programs" class="mw-redirect" title="Computer programs">computer programs</a> that enable <a href="/wiki/F
</p>
<div id="toc" class="toc" role="navigation" aria-labelledby="mw-toc-heading"><input type="checkbox" role="button" id="toctogglecheckbox" class="toctogglecheckbox" style="display:none" />
<ul>
<li class="toclevel-1 toctsection-1"><a href="#Connection-oriented_and_connectionless_communications"><span class="tocnumber">1</span> <span class="toctext">Connection-oriented and connec
<li class="toclevel-1 toctsection-2"><a href="#Clients_and_servers"><span class="tocnumber">2</span> <span class="toctext">Clients and servers</span></a></li>
<li class="toclevel-1 toctsection-3"><a href="#Popular_protocols_and_APIs"><span class="tocnumber">3</span> <span class="toctext">Popular protocols and APIs</span></a></li>
<li class="toclevel-1 toctsection-4"><a href="#See_also"><span class="tocnumber">4</span> <span class="toctext">See also</span></a></li>
<li class="toclevel-1 toctsection-5"><a href="#References"><span class="tocnumber">5</span> <span class="toctext">References</span></a></li>
</ul>
</div>
<h2><span class="mw-headline" id="Connection-oriented_and_connectionless_communications">Connection-oriented and connectionless communications</span><span class="mw-editsection"><span cl
<p>Very generally, most of communications can be divided into <a href="/wiki/Connection-oriented_communication" title="Connection-oriented communication">connection-oriented</a>, and <a
</p>
<h2><span class="mw-headline" id="Clients_and_servers">Clients and servers</span><span class="mw-editsection"><span class="mw-editsection-bracket"></span><a href="/w/index.php?title=Con
<link rel="mw-deduplicated-inline-style" href="mw-data:TemplateStyles:1033289096"/><div role="note" class="hatnote navigation-not-searchable">Main article: <a href="/wiki/Client%E2%80%
<p>For connection-oriented communications, communication parties usually have different roles. One party is usually waiting for incoming connections; this party is usually referred to as:
</p>
<p>For connectionless communications, one party ("server") is usually waiting for an incoming packet, and another party ("client") is usually understood as the one which sends an uns:
</p>
<h2><span class="mw-headline" id="Popular_protocols_and_APIs">Popular protocols and APIs</span><span class="mw-editsection"><span class="mw-editsection-bracket"></span><a href="/w/inde
<p>Network programming traditionally covers different layers of <a href="/wiki/OSI_model" title="OSI model">OSI/ISO model</a> (most of application-level programming belongs to L4 and up),
</p>
<table class="wikitable">
<tbody><tr>
<th>OSI/ISO Layer
</th>
<th>Protocol
</th>
<th>API
</th>
</tbody>
</table>
```



CODE 3

URLConn.java

```
package lab8;
import java.io.*;
import java.net.*;
import java.util.Scanner;
public class URLConn {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        System.out.println("Enter No of Urls");
        Scanner sin=new Scanner(System.in);
        int n=sin.nextInt();
        try{
            for(int j=0;j<n;j++)
            {
                System.out.println("Enter URL
"+(j+1)+" : ");

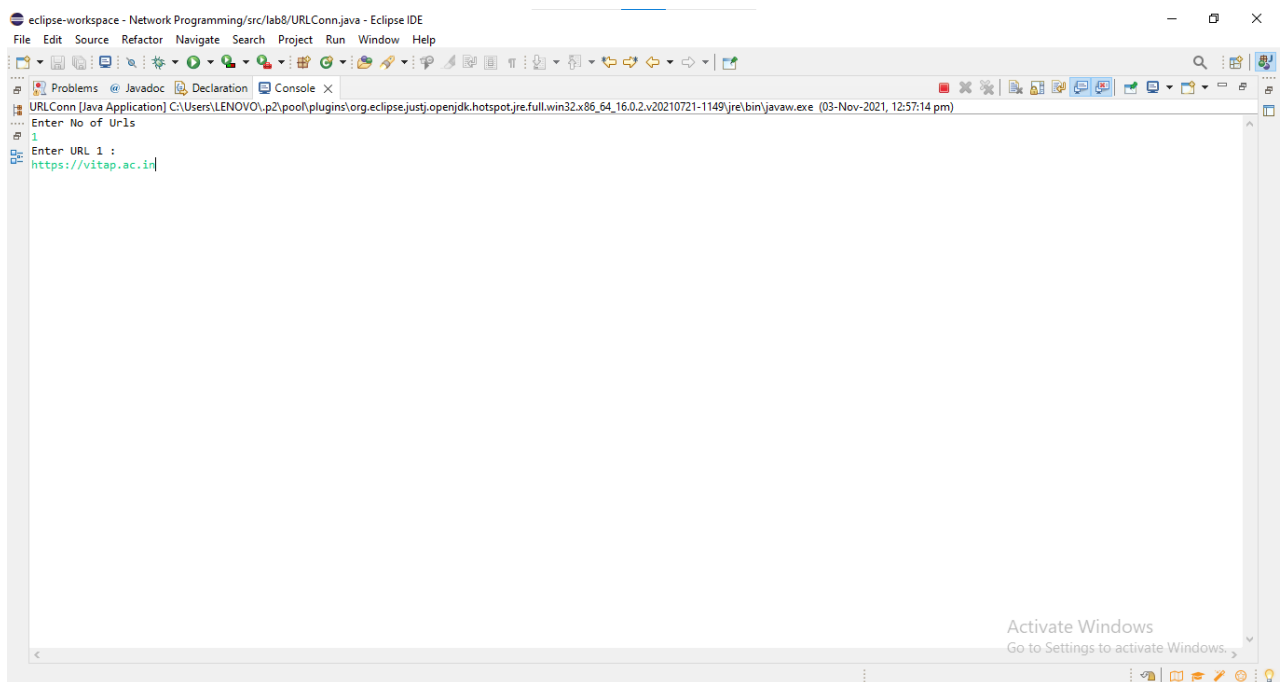
                String u =sin.next();
                URL url=new URL(u);
                URLConnection
urlcon=url.openConnection();
```

```

        InputStream
stream=urlcon.getInputStream();
        System.out.println("Content
Encoding: "+urlcon.getContentEncoding());
        int i;
        while((i=stream.read())!=-1)
        {
            System.out.print((char)i);
        }
    }
}
catch(IOException e)
{
    System.out.println(e);
}
sin.close();
}
}
}

```

Output:




```
eclipse-workspace - Network Programming/src/lab8/URLConn.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> URL Conn [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:57:14 pm - 12:57:59 pm)

<p>
    <p class="text-overflow-2">
    </p>
</div>
<div class="item">
    <div class="listed revealRight">
        <span><!-- <b>6:12 pm</b> / -->01 Jan 2021</span>
        <a href="https://vitap.ac.in/sched_announcement/we-dare-we-lead-we-shine-we-are-the-stars-of-vit-ap/"><a href="https://vitap.ac.in/contact
        <p class="text-overflow-2">
        </p>
    </div>

    <div class="listed revealRight">
        <span><!-- <b>6:12 pm</b> / -->23 Dec 2020</span>
        <a href="https://vitap.ac.in/sched_announcement/bba-bba-business-analytics-programs-start-7th-september-last-date-to-apply-28th-augustbba-
        <p class="text-overflow-2">
        </p>
    </div>

    <div class="listed revealRight">
        <span><!-- <b>6:12 pm</b> / -->19 Aug 2020</span>
        <a href="http://vtop1.vitap.ac.in:8080/bba/bbareg?utm_source=vitapwebsite target=_blankAPPLY NOW</a>
        <p class="text-overflow-2">
        </p>
    </div>
</div>
</div>

<!-- Controls -->
<a class="up carousel-control" href="#carousel-example-vertical" role="button" data-slide="prev">
    <i class="fa fa-angle-down" aria-hidden="true"></i>
    <span class="sr-only">Previous</span>
</a>
<a class="down carousel-control" href="#carousel-example-vertical" role="button" data-slide="next">
    <i class="fa fa-angle-up" aria-hidden="true"></i>
    <span class="sr-only">Next</span>
</a>
</div>
</div>

Activate Windows
Go to Settings to activate Windows.
```

```
eclipse-workspace - Network Programming/src/lab8/URLConn.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> URL Conn [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:57:14 pm - 12:57:59 pm)

        dots: false,
        margin:10,
        autoWidth:false,
        //autoplay:true,
        //autoplayTimeout:2000,
        //autoplayHoverPause:true,
        //animateOut: 'slideOutDown',
        //animateIn: 'flipInX',
        responsive:{
            0:{
                items:1
            },
            600:{
                items:1
            },
            1000:{
                items:2
            },
            1100:{
                items:3
            }
        }
    });
</script>

<!-- wp-social-feed-js -->

<!-- End-->
</body>
</html>

Activate Windows
Go to Settings to activate Windows.
```

CODE 4

URLReadFile.java

```
package lab8;
import java.io.*;
import java.net.*;
public class URLReadfile {

    public static void main(String[] args) throws
IOException{
    // TODO Auto-generated method stub
    try
    {
        URL url = new URL("https://geeksforgeeks.org");
        BufferedReader buff = new BufferedReader(new
InputStreamReader(url.openStream()));
        String str;
        while((str = buff.readLine()) != null)
        {
            System.out.println("\n");
            System.out.println(str);
        }
        buff.close();
    }
    catch(IOException e)
    {
        System.err.println(e);
    }
}
}
```

Output:

```
eclipse-workspace - Network Programming/src/lab8/URLReadfile.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> URLReadfile [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:59:16 pm - 12:59:20 pm)

<i class="gfg-icon gfg-icon_times gfg-icon_white hide-search"></i>

<button class="gcse-search__btn not-expanded">

<i class="gfg-icon gfg-icon_search gfg-icon_white gcse-search__icon"></i></button></form><li class="header-main__left-list-item p-relative" aria-expanded=false data-expandable=true<i cl

// Toggle Nine dot menu icons

toggleNineDotMenuImages(isDarkMode ? gfgThemeList.DARK : gfgThemeList.LIGHT)

</script></div><div class=nineDot-menu_right><ul><li><a href="https://www.geeksforgeeks.org/geeks-digest/?ref=ndm">Geeks Digest</a></li><li><a href="https://w

<script>

var m = false;

function googleTranslateElementInit() {

new google.translate.TranslateElement({pageLanguage: 'en'}, 'google_translate_element');

setTimeout(function(){

if (jQuery( window ).width() < 768){
```

```
eclipse-workspace - Network Programming/src/lab8/URLReadfile.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> URLReadfile [Java Application] C:\Users\LENOVO\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (03-Nov-2021, 12:59:16 pm - 12:59:20 pm)

<button class=google_translate_element_mobile data-gfg-action=google_translate_mobile aria-expanded=false data-expanded=true>

<i class="gfg-icon gfg-icon_translate googleTranslateToggleMobile"></i>Change Language</button></div></div><div style=height:80px></div></div><div class=header-main__slider><button clas

<i class="gfg-icon gfg-icon_arrow-left gicon-centered"></i></button><ul id=hslider><li><a href="https://www.geeksforgeeks.org/data-structures/?ref=shm">Data Structures</a></li><a href="ht

<i class="gfg-icon gfg-icon_arrow-right gicon-centered"></i></button></div></div><button id=scrollTopBtn title="Scroll to Top" type=button class="btn btn-success">8#9658</button><div ic

<a href="https://www.geeksforgeeks.org/must-do-coding-questions-for-product-based-companies/?ref=ghb" title="Permalink to Must Do Coding Questions for Product Based Companies" rel=bookma

<span class="gfg-icon gfg-icon_arrow-right_filled"></span></a></div></div><div class=gfg--carousel><div class=gfg--carousel_wrap data-flex=3 data-tb-flex=2 data-sm-flex=1 data-slide=1><

<span class=video-duration>33:12</span></div><div class=head>RecyclerView in Android with Example</div><div class=meta>31/10/2021</div></a></div></div><div class="gfg--carousel_wrap-slic

<span class=video-duration>25:39</span></div><div class=head>How to Implement Lottie Animation in Flutter Application?</div><div class=meta>31/10/2021</div></a></div></div><div class="gfg

<span class=video-duration>32:04</span></div><div class=head>How to Change the Whole App Language in Android?</div><div class=meta>29/10/2021</div></a></div></div><div class="gfg--carous

<span class=video-duration>14:05</span></div><div class=head>Sending Emails using Python</div><div class=meta>01/11/2021</div></a></div></div><div class="gfg--carousel_wrap-slide next">

<span class=video-duration>8:41</span></div><div class=head>Simple Plagiarism Detection using Python</div><div class=meta>28/10/2021</div></a></div></div><div class="gfg--carousel_wrap-s

<span class=video-duration>10:24</span></div><div class=head>Floating Action Button in Flutter with Animation</div><div class=meta>24/10/2021</div></a></div></div><div class="gfg--carous
```

