```java
//1.WAP to download a webpage using URLConnection.

import java.io.*;
import java.net.URL;
import java.net.MalformedURLException;

public class URLConnectionDownload {

    public static void DownloadWebPage(String webpage)
    {
        try {
            URL url = new URL(webpage);
            BufferedReader readr =
                new BufferedReader(new InputStreamReader(url.openStream()));
            BufferedWriter writer = new BufferedWriter(new FileWriter(fileName:"Download.html"));// Enter filename in which you want to download
                // read each line from stream till end
            String line;
            while ((line = readr.readLine()) != null) {
                writer.write(line);
            }

            readr.close();
            writer.close();
            System.out.println(x:"Successfully Downloaded.");
        }
        catch (MalformedURLException mue) {
            System.out.println(x:"Malformed URL Exception raised");
        }
        catch (IOException ie) {
            System.out.println(x:"IOException raised");
        }
    }
    public static void main(String args[])
        throws IOException
    {
        String url = "https://example.com/";
        DownloadWebPage(url);
    }
}
```



```
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PS D:\Network Programming\lab1\lab4>  & 'C:\Program Files\Java\jdk-20\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\Network Prog
ramming\lab1\lab4\bin' 'URLConnectionDownload'
Successfully Downloaded.
PS D:\Network Programming\lab1\lab4>
```

```java
//2.WAP to display all the header fields and values from a webpage response.
import java.net.*;
import java.io.*;

public class HeaderFields {

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

        URL url = new URL(spec:"https://www.example.com");
        HttpURLConnection con = (HttpURLConnection) url.openConnection();

        // Retrieve the header fields
        for (String key : con.getHeaderFields().keySet()) {
            System.out.println(key + ": " + con.getHeaderField(key));
        }

        con.disconnect();
    }
}
```



```
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PS D:\Network Programming\lab1\lab4>  & 'C:\Program Files\Java\jdk-20\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\Network Prog
ramming\lab1\lab4\bin' 'HeaderFields'
null: HTTP/1.1 200 OK
X-Cache: HIT
Server: ECS (oxr/830C)
Last-Modified: Thu, 17 Oct 2019 07:18:26 GMT
Date: Mon, 15 May 2023 06:56:06 GMT
Accept-Ranges: bytes
Cache-Control: max-age=604800
Etag: "3147526947"
Vary: Accept-Encoding
Expires: Mon, 22 May 2023 06:56:06 GMT
Content-Length: 1256
Age: 241037
Content-Type: text/html; charset=UTF-8
PS D:\Network Programming\lab1\lab4>
```

```java
//3.WAP to find out the content type, content length and last modified and access date of a URL.

import java.net.*;
import java.io.*;

public class URLInfo {
    public static void main(String[] args) {
        try {
            URL url = new URL(spec:"https://example.com/");
            HttpURLConnection connection = (HttpURLConnection) url.openConnection();
            connection.setRequestMethod(method:"HEAD");

            System.out.println("Content Type: " + connection.getContentType());
            System.out.println("Content Length: " + connection.getContentLength());
            System.out.println("Last Modified: " + new java.util.Date(connection.getLastModified()));
            System.out.println("Access Date: " + new java.util.Date());
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

```
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PS D:\Network Programming\lab1\lab4>  & 'C:\Program Files\Java\jdk-20\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\Network Programming\lab1\lab4\bin' 'URLInfo'
Content Type: text/html; charset=UTF-8
Content Length: 1256
Last Modified: Thu Oct 17 13:03:26 NPT 2019
Access Date: Mon May 15 12:41:30 NPT 2023
PS D:\Network Programming\lab1\lab4>
```