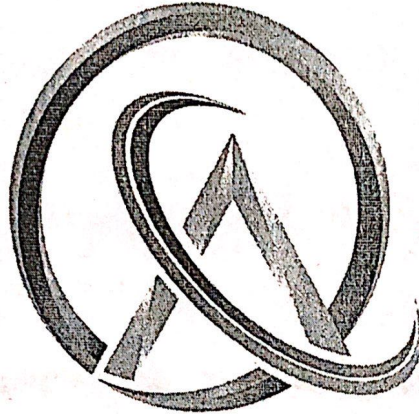


INSTITUTE OF ENGINEERING

ADVANCED COLLEGE OF ENGINEERING AND MANAGEMENT

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OF ENGINEERING & MANAGEMENT
Affiliated to Tribhuvan University (T.U.)

LAB REPORT

SUBJECT : Network Programming

LAB NO : 3

SUBMITTED BY:

NAME : Anish Shrestha

ROLL NO: 1

DATE : 2082/09/30

SUBMITTED TO:

BCA Department

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14/09/2020

TITLE: HTTP AND COOKIE HANDLING

OBJECTIVES:

- To understand how to connect to local HTTP server using Java.
- To understand the concept of HTTP Cookies and their role in session management.
- To learn to implement the CookieHandler and CookieManager classes in Java.

THEORY:

HTTP (Hypertext Transfer Protocol)

- It is the protocol used by the world wide web that defines how messages are formatted and transmitted, and what actions web servers and browsers should take in response.
- It is stateless.

CookieHandler

- The `java.net.CookieHandler` is an abstract class that provides a callback mechanism to manage cookies within the HTTP state management policy.
- It intercepts requests to add appropriate cookies and intercepting responses to save new cookies.

CookieManager

→ The `java.net.CookieManager` is a concrete implementation of `CookieHandler`. It separates the logic storage of cookie from the policy surrounding accepting and rejecting cookies.

SOURCE CODE:

```
package lab3;  
import java.*;
```

```
public class Solution{  
    public static void main(String[] args){  
        question1();  
        question2();  
    }  
}
```

// program to connect to server running on localhost

```
private static void question1(){  
    String urlStr = "http://127.0.0.1:8080/index.html";  
    System.out.println("Attempting to connect to :");  
    try{  
        URL url = new URL(urlStr);  
    }  
}
```

```

HttpURLConnection conn = (HttpURLConnection) url.openConnection();
conn.setRequestMethod("GET");

int responseCode = conn.getResponseCode();
System.out.println("Server Response Code : " + responseCode);

if (responseCode == 200) {
    BufferedReader in = new BufferedReader ( new
        InputStreamReader (conn.getInputStream()));

    String inputline;
    int count = 0;
    while ( (inputline = in.readLine()) != null && count < 5)
    {
        System.out.println(inputline);
        count++;
    }
    in.close();
}
} catch (ConnectIOException e) {
    System.out.println (e.getMessage());
}
}

```

```

"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaagent:D:\dow
Attempting to connect to: http://127.0.0.1:8080/index.html
Server Response Code: 200
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">

Process finished with exit code 0

```


//2 to retrieve cookie from server

```
public static void question2(){
```

```
    CookieManager cm = new CookieManager();
```

```
    CookieHandler.setDefault(cm);
```

```
    try {
```

```
        URL url = new URL("http://httpbin.org/cookies/set?
```

```
            myCookie = Java Lab & Session = 12345");
```

```
        HttpURLConnection conn = (HttpURLConnection) url.openConnection();
```

```
        conn.setRequestMethod("GET");
```

```
        conn.connect();
```

```
        Map<String, List<String>> headerFields = conn.getHeaderFields();
```

```
        List<String> cookieHeader = headerFields.get("set-cookie");
```

```
        if (cookieHeader != null){
```

```
            for (String c : cookieHeader)
```

```
                cm cm.getCookieStore().add(null, HttpCookie.  
                    parse(cookie String).get(0));
```

```
        }
```

```
        System.out.println("cookies: " + cm.getCookieStore().  
            getCookies());
```

```
        conn.disconnect();
```

```
    } catch (Exception ex){
```

```
        System.out.println(ex.getMessage());
```

```
    }
```

```
}
```

```
}
```

```
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaagent  
Cookies: [myCookie=JavaLab, session=12345]
```

```
Process finished with exit code 0
```

CONCLUSION:

In this lab, we successfully explored client-server interaction and state management in Java. We implemented a client program to connect to a local HTTP server running on port 8080. We also utilized `CookieHandler` and `CookieManager` classes to handle HTTP cookies.