## DAY 25:

## ASSIGNMENT 4:

## Task 4: Java Networking

Write a simple HTTP client that connects to a URL, sends a request, and displays the response headers and body.

## ANSWER:

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.URL;
import java.util.List;
import java.util.Map;

public class SimpleHttpClient {
    public static void main(String[] args) {
        String urlString = "http://www.example.com"; // Replace with your desired URL

        try {
            // Create a URL object
            URL url = new URL(urlString);

            // Open a connection to the URL
            HttpURLConnection connection = (HttpURLConnection) url.openConnection();

            // Set the request method (GET is the default)
            connection.setRequestMethod("GET");

            // Get the response code
            int responseCode = connection.getResponseCode();
            System.out.println("Response Code: " + responseCode);

            // Get and print the response headers
            Map<String, List<String>> headers = connection.getHeaderFields();
            for (Map.Entry<String, List<String>> header : headers.entrySet()) {
                System.out.println(header.getKey() + ": " + String.join(", ", header.getValue()));
            }

            // Read and print the response body
            BufferedReader in = new BufferedReader(new
InputStreamReader(connection.getInputStream()));
            String inputLine;
            StringBuilder response = new StringBuilder();

            while ((inputLine = in.readLine()) != null) {
                response.append(inputLine);
                response.append(System.lineSeparator());
            }
            in.close();

            // Print the response body
            System.out.println("Response Body:");
            System.out.println(response.toString());

        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

## Explanation

1. URL: The URL of the web page to connect to is specified as urlString. You can replace this with any desired URL.

2. HttpURLConnection:

- A HttpURLConnection object is created by calling openConnection() on the URL object.

- The request method is set to "GET" using setRequestMethod("GET").

3. Response Code: The response code from the server is obtained using getResponseCode().

4. Headers: The response headers are retrieved using getHeaderFields(), which returns a map of header fields. These are printed out using a loop.

5. Response Body:

- A BufferedReader is used to read the response body from the InputStream of the connection.

- The response is read line by line and appended to a StringBuilder object.

- The response body is printed out at the end.

6. Exception Handling: IOException is caught and its stack trace is printed to handle any I/O errors.

This simple HTTP client demonstrates how to make an HTTP GET request, read the response headers, and print the response body in Java.