

## client\_socket.java

/\*client\_socket - HTTP client implementation to connect to a specified server on predefined port.

```
import java.io.*;
```

```
public class client_socket  
{
```

```
    //declaration of global variables  
    private Socket clientSocket = null;  
    private BufferedInputStream client_input;  
    private BufferedOutputStream client_output;  
    //GET and PUT are the method names  
    //web site name will be host_name  
    private String host_name,method_name;  
    private String object_path;  
    private int port;
```

```
    //initializing global variables (constructor)  
    client_socket(String host1, int port1, String method, String path)  
    {  
        this.host_name = host1.trim();  
        this.port = port1;  
        this.method_name = method.trim();  
        this.object_path = path;  
        init_socket();  
    }
```

```
    //verifying the arguments  
    //creating an instance of client_socket class
```

```
    public static void main(String[] args)  
    {  
        String host = args[0];  
        int port1 = Integer.parseInt(args[1]);  
        String method = args[2];  
        String path = (args[3]);  
  
        //checking the conditions here  
        if (host == null)  
        {  
            System.out.println("Error: Declare the Host Name/ Host IP in  
Arguments");  
        }  
        else if (port1 <= 0)  
        {  
            System.out.println("Error: Declare Port number in Arguments");  
        }  
        else if (method == null)  
        {
```

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        System.out.println("Error: Declare a Method_name in Arguments (GET/
PUT)");
    }
    else if (path.toString() == null)
    {
        System.out.println("Error: Declare the Path/File name in Arguments
(XYZ.html)");
    }

    client_socket client = new client_socket(host, port1, method, path);
}

//establishing socket connection between client & server
//initializing the input and output streams
private void init_socket()
{
    try
    {
        String request = null;
        clientSocket = new Socket(host_name, port);
        System.out.println("CONNECTION ESTABLISHED: client & server");
        System.out.println("Client IP : "+clientSocket.getLocalAddress());
        System.out.println("Server IP : "+clientSocket.getInetAddress()+" :
"+clientSocket.getPort());

        client_input = new BufferedInputStream(clientSocket.getInputStream
());
        client_output = new BufferedOutputStream
(clientSocket.getOutputStream());
        System.out.println("\nCONNECTION INITIALIZED: client Input/Output
streams");

        //function call depending on the HTTP method passed as argument
        if(method_name.equalsIgnoreCase("get"))
        {
            get_method();
        }
        else if(method_name.equalsIgnoreCase("put"))
        {
            put_method();
        }
        else
        {
            request = method_name+ " " + object_path + " " + "HTTP/1.0";
            sendRequest(client_output, request);
        }
        clientSocket.close();
    }
}

```

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

        catch (Exception e)
        {
            e.printStackTrace();
        }
    }

    //function handling for sending the client request
    private static void sendRequest(BufferedOutputStream output, String
request) throws Exception
    {
        System.out.println();
        System.out.println("CLIENT REQUEST: ");
        System.out.println(request);
        byte [] buff = request.getBytes();

        output.write(buff);
        output.flush();
    }

    //function handling for reading the server's response
    private static void readResponse(BufferedInputStream in) throws Exception
    {
        byte[] contents = new byte[2048];
        int bytesRead = 0;
        System.out.println("SERVER'S RESPORNSE: ");

        while ((bytesRead = in.read(contents)) != -1)
        {
            System.out.println(new String(contents, 0, bytesRead));
        }
    }

    //function handling for message exchange between client and server
    //client GET request
    private void get_method () throws Exception
    {
        String URL = method_name + " /" + object_path + " " + "HTTP/1.0" + "\r\n
\r\n";

        try
        {
            sendRequest(client_output, URL);
        }
    }
}
```

```

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        readResponse(client_input);
    }

    catch(Exception e)
    {
        e.printStackTrace();
    }

    finally
    {
        //CLOSING socket,input stream, output stream
        client_output.close();
        client_input.close();
        if(clientSocket.isClosed() != true)
            clientSocket.close();
    }
}

//function handling used for constructing and sending
//client PUT request
private void put_method() throws Exception
{
    int count = 0;
    FileInputStream output_file = null;
    BufferedInputStream buffer_input = null;
    String URL = method_name + " " + object_path;

    try
    {
        sendRequest(client_output, URL);
        //reading the data in file and sending it over socket as byte
        File fp = new File(object_path);
        long length = fp.length();
        if(length > Integer.MAX_VALUE)
            System.out.println("LARGE FILE");

        byte[] buffr = new byte[(int)length];
        output_file = new FileInputStream(object_path);
        System.out.println("File size = " + output_file.available());

        buffer_input = new BufferedInputStream(output_file);

        while((count = buffer_input.read(buffr)) > 0)
        {
            client_output.write(buffr, 0, count);
        }
        clientSocket.shutdownOutput();
    }
}

```

```

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        readResponse(client_input);
    }

    catch(Exception e)
    {
        e.printStackTrace();
    }

    finally
    {
        //CLOSING END socket, file stream, input stream, output stream
        buffer_input.close();
        client_output.close();
        client_input.close();
        output_file.close();
        if(clientSocket.isClosed() != true)
            clientSocket.close();
    }
}

```