Shanmathi Rajasekar
800966697

ITCS 6166 –Computer Communications and Networks
Project1: HTTP Client and Server
Shanmathi Rajasekar
800966697

HTTP Client: Client initiates communication with server

Steps:

1. Creating Sockets using Socket class
2. Requesting server for TCP connection
3. If connected, client requests for GET/PUT using String command
   GET: To get a file from server using InputStream inputSt
   PUT: To save a file in server using InputStream inputs and clientSocket.getOutputStream()
4. Read and display Server's response using

HTTP Server: Server responds to client's request

 Steps:

1. Creating Sockets
2. Server waits for clients (terminated by ctrl + c)
3. Server accepts Client (if same port) using method- accept()
4. Once connected, it will receive request from client
5. Server process the Client's request
   GET(httpMethod.equals("GET")): It fetches the file mentioned in the client's request if it is present and displays it to client with the help of BufferedReader br.
   If file is present- it responds with '200 OK' message and contents of the file.
   If the file is not present- it responds with '404 Not Found' message
   PUT(httpMethod.equals("PUT")): It saves the file (given by the client)

To run the program:

1. Open two command prompt window (for client and server)
2. Navigate to the directory where the server and client programs are kept
3. Compile the programs – javac filename.java--------(1)
4. On server cmd, type - java filename portnumber and press enter ---------(2)
5. Now the server will wait for the clients
6. On client side, type – java Filename Localhost PortNumber Command Filename(with ext)
   Where portnumber should be the same as in (2) command
   Command can be GET/PUT
7. The server's response can be seen in client

Output:

Server:

```
C:\Users\shanm>cd Downloads/CCN

C:\Users\shanm\Downloads\CCN>javac myserver.java

C:\Users\shanm\Downloads\CCN>java myserver 5001
Port: 5001
Server is waiting for client

 Waiting for client
```

GET:

Client:

```
C:\Users\shanm\Downloads\CCN>javac myclient.java

C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 GET Text.txt
HTTP/1.1 200 OK
Server: Java HTTPServerContent-Type:
Content-Length: 17
Connection: close

Hi!
How are you?

C:\Users\shanm\Downloads\CCN>
```

Server:

```
C:\Users\shanm\Downloads\CCN>java myserver 5001
Port: 5001
Server is waiting for client

 Waiting for client

 Waiting for client
The Client /127.0.0.1:57562 is connected
```

GET – file not found:

Client:

```
C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 GET Text1.txt
HTTP/1.1 404 Not Found
Server: Java HTTPServerContent-Type: text/html
Content-Length: 158
Connection: close

<html><title>HTTP Server in java</title><body><b>The Requested resource not found ....Usage: http://127.0.0.1:500
tp://127.0.0.1:5000/</b></body></html>

C:\Users\shanm\Downloads\CCN>
```

GET – when file is empty:

Client:

```
C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 GET ip1.txt
HTTP/1.1 200 OK
Server: Java HTTPServerContent-Type:
Content-Length: 0
Connection: close
```

GET - when host name is different:

Client:

```
C:\Users\shanm\Downloads\CCN>java myclient localhost1 5001 GET ip1.txt
Unknown hostname
```

PUT:

Client:

```
C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 PUT Text.txt
File successfully saved!
Text.txt file sent
```

Server:

```
 Waiting for client
The Client /127.0.0.1:57588 is connected
File saved
```

Client: (image file)

```
C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 PUT swallow0.jpg
File successfully saved!
swallow0.jpg file sent
```

GET: file not found:

Client:

```
C:\Users\shanm\Downloads\CCN>java myclient localhost 5001 PUT Text1.txt
give valid filename
```