

Computer Networks (CS F303) Lab 7- 05/04/2021

Name - Shashank Mittal

ID - 2018A7PS0127G

1. The client, as a command-line argument, accepts the URL of the file. The URL can be HTTP or HTTPS-based. (2 marks)

HTTPS-

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client https://web.ist.utl.pt/~fabio.ferreira/material/asa/clrs.pdf
Successfully connected with server
SSL connected.
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:52:46 GMT
Server: Apache/2.4.38 (Debian)
Last-Modified: Fri, 22 Feb 2008 13:23:38 GMT
ETag: "c82e39-446bf21496a80"
Accept-Ranges: bytes
Content-Length: 13119033
Connection: close
Content-Type: application/pdf
Set-Cookie: BACKENDID=backend_38pIL|YGsII|YGsII; path=/

Reply received.
Closing the connection...
```

HTTP-

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client http://www.africau.edu/images/default/sample.pdf
Successfully connected with server
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:55:59 GMT
Content-Type: application/pdf
Content-Length: 3028
Connection: close
Set-Cookie: __cfduid=dfd884ab0c89bcd9d40248e155d7c5ce31617627359; expires=Wed, 05-May-21 12:55:59 GMT; path=/; domain=.africau.edu; HttpOnly; SameSite=Lax
Last-Modified: Fri, 24 Feb 2017 17:42:38 GMT
ETag: "50b0708e-bd4"
Expires: Sun, 06 Mar 2022 15:30:12 GMT
Cache-Control: max-age=31536000
Host-Header: 8441280b0c35cbc1147f8ba998a563a7
X-Proxy-Cache-Info: DT:1
CF-Cache-Status: HIT
Age: 2582747
Accept-Ranges: bytes
cf-request-id: 0943b33c07b0000fcd98c34b0000000001
Report-To: [{"endpoints":[{"url":"https://a.nel.cloudflare.com/report?s=ZLBYKqfY50bnTK2B41ke0t6F42w2hhWJQViohZVP05thEAex15EX4swjpnrmJayxybjXnND0xNBwxRan2BIZ9c5EoDNDa2ZVLS8C3GWCUN2BjNr0X3D"}], "group":""}]
cf-nel="{\"max_age\":604800,\"report_to\":\"cf-nel\"}"
NEL: {"max_age":604800,"report_to":"cf-nel"}
Server: cloudflare
cf-ray: 63b2ef13fe88fcd9-KIX
alt-svc: h3-27=":443"; ma=86400, h3-28=":443"; ma=86400, h3-29=":443"; ma=86400

Reply received.
Closing the connection...
```

2. If the URL does not exist or unreachable, the client prints an error and exits. (2 marks)

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client https://1234.vcd
No such url exist. No such host. Exiting...!
```

3. After connecting to the server, the client sends a GET request to the server. (2 marks)

HTTPS-

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client https://web.lst.utl.pt/~fabio.ferreira/material/asa/clrs.pdf
Sucessfully conected with server
SSL connected.
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:52:46 GMT
Server: Apache/2.4.38 (Debian)
Last-Modified: Fri, 22 Feb 2008 13:23:38 GMT
ETag: "c82e39-446bf21496a80"
Accept-Ranges: bytes
Content-Length: 13119033
Connection: close
Content-Type: application/pdf
Set-Cookie: BACKENDID=backend_38pIL|YGsII|YGsII; path=/

Reply received.
Closing the connection...
```

HTTP-

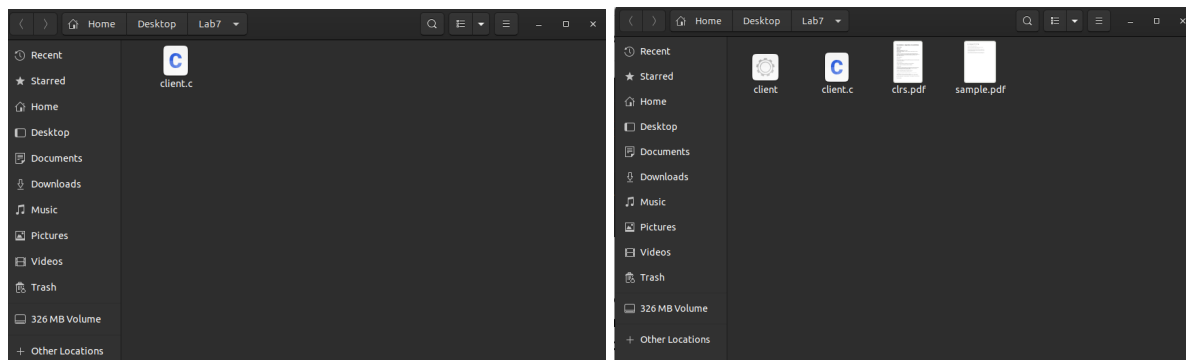
```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client http://www.africau.edu/images/default/sample.pdf
Sucessfully conected with server
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:55:59 GMT
Content-Type: application/pdf
Content-Length: 3028
Connection: close
Set-Cookie: __cfduid=ddfd804ab0c89bcd9d40248e155d7c5ce31617627359; expires=Wed, 05-May-21 12:55:59 GMT; path=/; domain=.africau.edu; HttpOnly; SameSite=Lax
Last-Modified: Fri, 24 Feb 2017 17:42:38 GMT
ETag: "58b0708e-bd4"
Expires: Sun, 06 Mar 2022 15:30:12 GMT
Cache-Control: max-age=31536000
Host-Header: 044128080c35cbc1147f0ba998a563a7
X-Proxy-Cache-Info: DT:1
CF-Cache-Status: HIT
Age: 2582747
Accept-Ranges: bytes
cf-request-id: 0943b3c07b0000fcd99c34b000000001
Report-To: {"endpoints":[{"url":"https://a.nel.cloudflare.com/report?s=ZLByKqfY50bNTN2B41keot6F42w2hhWjQViohZYPD5thEaEX15EX4sw]pnrmJayxbYjXnND0xNBwxRaX2BI29c5E0ND0A2ZVL58C3GWCUK2BjNf0X3D"}],"group":""}
cf-nel: {"max_age":604800,"report_to":"cf-nel"}
NEL: {"max_age":604800,"report_to":"cf-nel"}
Server: cloudflare
CF-RAY: 63b2ef13fe88fcd9-KIX
alt-svc: h3-27=":443"; ma=86400, h3-28=":443"; ma=86400, h3-29=":443"; ma=86400

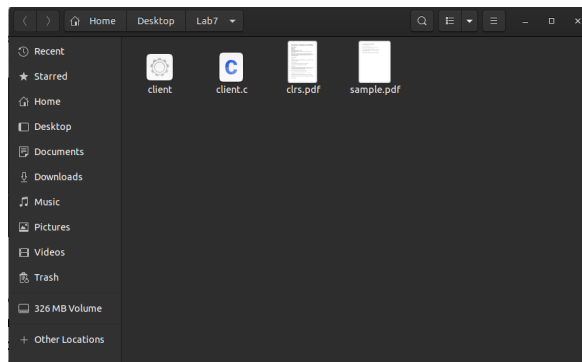
Reply received.
Closing the connection...
```

4. The client downloads the whole file and saves it to the local folder with the same file name as mentioned in the URL. (8 marks)

Folder before and after the code is run.



5. If a file with the same name exists, the old file is overwritten. (1 mark)



6. The client exits after downloading the file. (1 mark)

HTTPS-

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client https://web.ist.utl.pt/~fablo.ferreira/material/asa/clrs.pdf
Sucessfully connected with server
SSL connected.
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:52:46 GMT
Server: Apache/2.4.38 (Debian)
Last-Modified: Fri, 22 Feb 2008 13:23:38 GMT
ETag: "c82e39-446bf21496a80"
Accept-Ranges: bytes
Content-Length: 13119033
Connection: close
Content-Type: application/pdf
Set-Cookie: BACKENDID=backend_38pIL|VGsII|VGsII; path=/

Reply received.
Closing the connection...
```

HTTP-

```
(base) shashank@shashank-X542UQR:~/Desktop/Lab7$ ./client http://www.africau.edu/images/default/sample.pdf
Sucessfully connected with server
HTTP response header:

HTTP/1.1 200 OK
Date: Mon, 05 Apr 2021 12:55:59 GMT
Content-Type: application/pdf
Content-Length: 3928
Connection: close
Set-Cookie: _cfduid=dfd884ab0c89bcd9d40248e155d7c5ce31617627359; expires=Wed, 05-May-21 12:55:59 GMT; path=/; domain=.africau.edu; HttpOnly; SameSite=Lax
Last-Modified: Fri, 24 Feb 2017 17:42:38 GMT
ETag: "58b0708e-bd4"
Expires: Sun, 06 Mar 2022 15:38:12 GMT
Cache-Control: max-age=31536000
Host-Header: 8441280b0c35cbc1147f8ba998a563a7
X-Proxy-Cache-Info: DT:1
CF-Cache-Status: HIT
Age: 2582747
Accept-Ranges: bytes
cf-request-id: 0943b3c07b0000fcd98c34b000000001
Report-To: {"endpoints":[{"url":"https://a.nel.cloudflare.com/report?s=ZLByKqFY50bnTX2841ke0t6F42w2hhWjQViohZYVpD5thEaX1SEx4swjpnrmJayxbYjXhND0xNBwxRaX2BIZ9c5EoNDAAZ2VLS8C3GNCUN2BjNr0X3D"}], "group": "cf-nel", "max_age": 604800}
NEL: {"max_age": 604800, "report_to": "cf-nel"}
Server: cloudflare
CF-RAY: 63b2ef13fe88fd9-KIX
alt-svc: h3-27=":443"; ma=86400, h3-28=":443"; ma=86400, h3-29=":443"; ma=86400

Reply received.
Closing the connection...
```