LAB 8 - TCP Client to Download File

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THIS DOCUMENT DISCUSSES EACH CASE IN DETAIL RELATED TO THE TCP CLIENT

1. The client accepts the URL as a command line argument. It accepts both HTTP and HTTPS-based URLs.

   - ***HTTP-based URL***

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ gcc client.c -o client
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ ./client http://www.africau.edu/images/default/sample.pdf
Domain: www.africau.edu
Path: images/default/sample.pdf
Connecting...
Sending data...
Data sent.
Receiving data...

HTTP/1.1 200 OK
status=200

Content-Length: 3028
Saving data...

No. of bytes received: 1024 from 3028
No. of bytes received: 2048 from 3028
No. of bytes received: 3028 from 3028

Done.

goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ 
```

- *HTTPS-based URL*

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ make
gcc client.c -o client
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ ./client https://www.google.com/robots.txt
Domain: www.google.com
Path: robots.txt

HTTP/1.1 200 OK
status = 200

Content-Length: 7221
Saving data...

No. of bytes received: 1024 from 7221
No. of bytes received: 2048 from 7221
No. of bytes received: 3072 from 7221
No. of bytes received: 4096 from 7221
No. of bytes received: 5120 from 7221
No. of bytes received: 6144 from 7221
No. of bytes received: 7168 from 7221
No. of bytes received: 7221 from 7221

Done.
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$
```

2. In case we specify a wrong URL, the client returns an error message.

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ ./client http://www2.africau.edu/images/sample.pdf
Domain: www2.africau.edu
Path: images/sample.pdf
ERROR -> gethostbyname: Unknown host
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$
```

3. The client sends a GET request to the server to get the file after successful connection.

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ ./client http://www.africau.edu/images/default/sample.pdf
Domain: www.africau.edu
Path: images/default/sample.pdf
Connecting...
Sending data...
Data sent.
Receiving data...

HTTP/1.1 200 OK
status=200

Content-Length: 3028
Saving data...

No. of bytes received: 1024 from 3028
No. of bytes received: 2048 from 3028
No. of bytes received: 3028 from 3028

Done.

goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ 
```
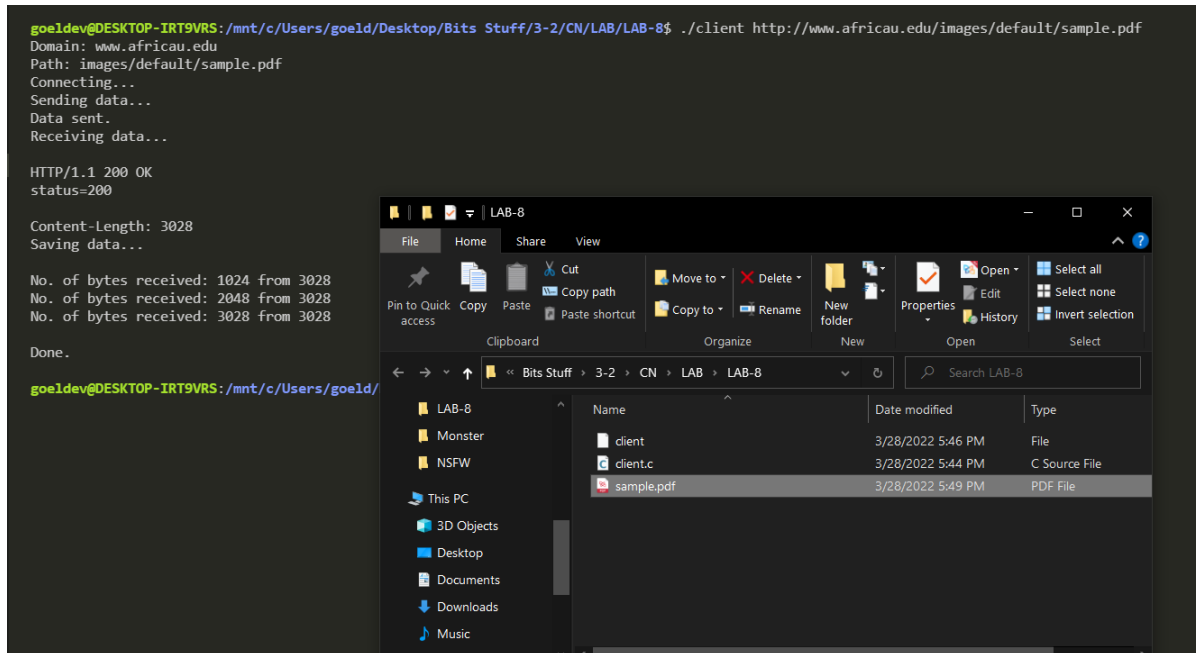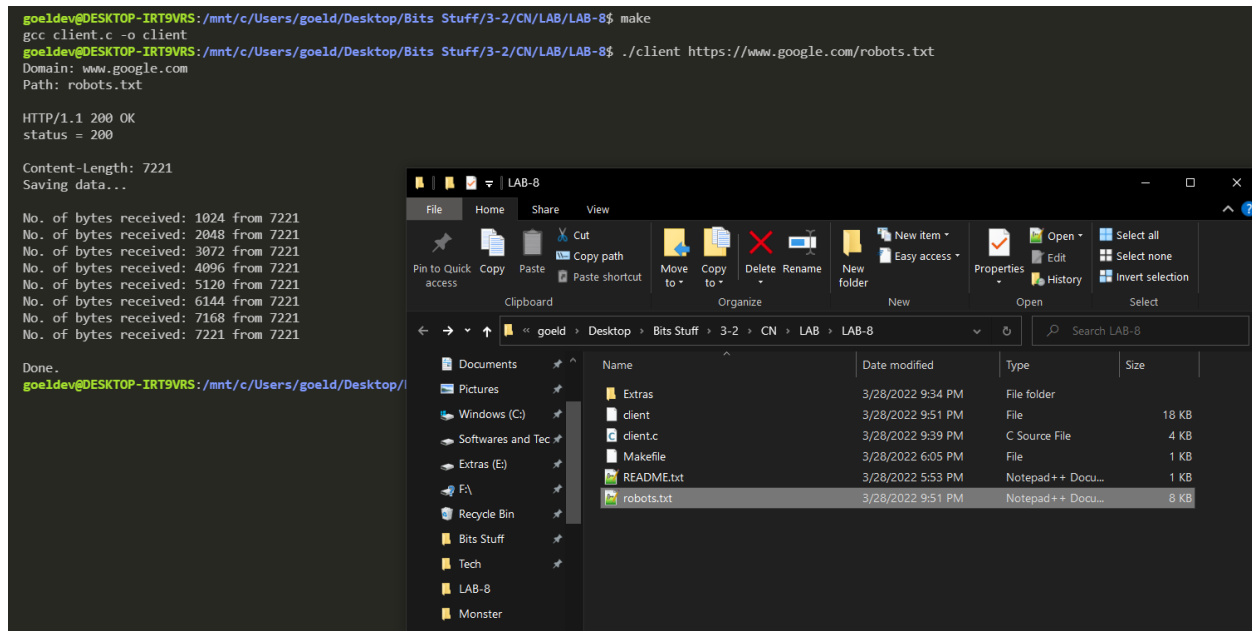
4. The client downloads the whole file and saves it to the local folder with the same file name as mentioned in the URL. If a file with the same name exists, the old file is overwritten.

- *HTTP-based URL*

- *HTTPS-based URL*

5. The client exits after completing the download process. This is indicated by the 'Done' message.

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$ ./client http://www.africau.edu/images/default/sample.pdf
Domain: www.africau.edu
Path: images/default/sample.pdf
Connecting...
Sending data...
Data sent.
Receiving data...

HTTP/1.1 200 OK
status=200

Content-Length: 3028
Saving data...

No. of bytes received: 1024 from 3028
No. of bytes received: 2048 from 3028
No. of bytes received: 3028 from 3028

Done.

goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB
/LAB-8$
```

6. In case we do not specify a URL, the client returns an error message.

```
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB/LAB-8$ ./client
Inaccurate number of input arguments
Syntax : ./client <url>
goeldev@DESKTOP-IRT9VRS:/mnt/c/Users/goeld/Desktop/Bits Stuff/3-2/CN/LAB/LAB-8$
```