

Lab 8: TCP Client to Download File

Aryan Tyagi

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Compile and Run

Compilation

```
gcc ./client.c -o ./client.out
```

Execution

```
./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
```

Screenshots

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

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
```

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

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out invalid.url  
ERROR: Could not resolve host: invalid.url  
vscode → /workspaces/Lab/Lab08 (main x) $
```

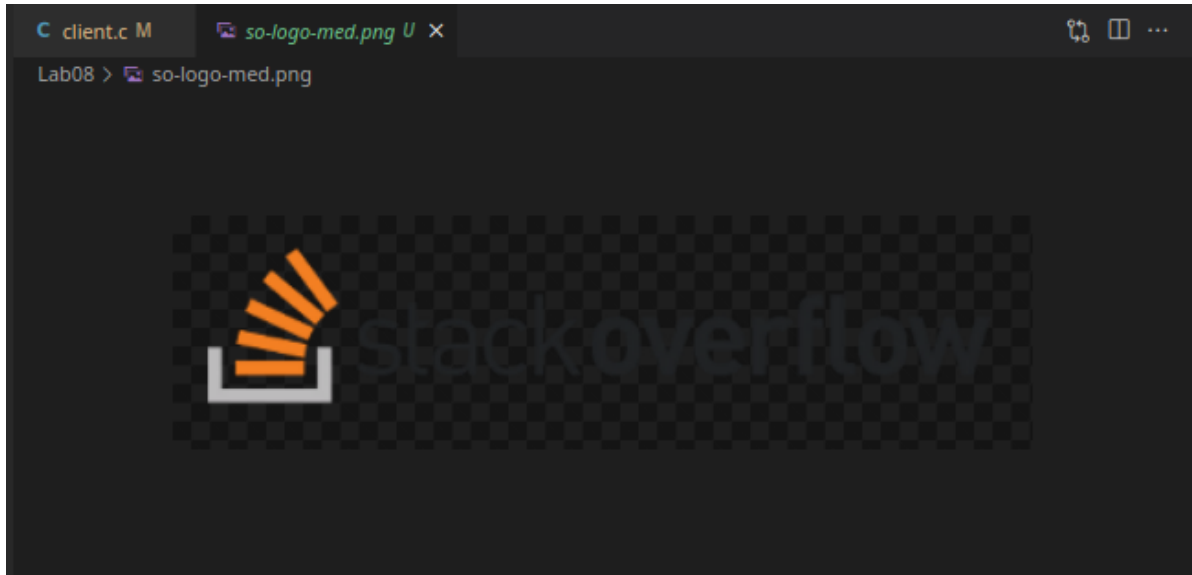
```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out ftp://google.com  
ERROR: Unrecognized protocol: ftp  
vscode → /workspaces/Lab/Lab08 (main x) $
```

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

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png  
Socket created  
Connected to server  
Request sent
```

4. The client downloads the whole file and saves it to the local folder with the same file name as mentioned in the URL. (6 marks)

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
Socket created
Connected to server
Request sent
File received: so-logo-med.png
vscode → /workspaces/Lab/Lab08 (main x) $
```



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

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
Socket created
Connected to server
Request sent
so-logo-med.png already exists and will be overwritten
File received: so-logo-med.png
vscode → /workspaces/Lab/Lab08 (main x) $
```

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

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
Socket created
Connected to server
Request sent
so-logo-med.png already exists and will be overwritten
File received: so-logo-med.png
vscode → /workspaces/Lab/Lab08 (main x) $
```

Extra

```
# run with --debug flag to get additional output
./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png --
debug
```

```
vscode → /workspaces/Lab/Lab08 (main x) $ ./client.out https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png --debug
=== DEBUG INFO ===
argv1=https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png
url=https://sstatic.net/stackexchange/img/logos/so/so-logo-med.png/
protocol=https
domain=sstatic.net
port=443
path=/stackexchange/img/logos/so/so-logo-med.png/
file=so-logo-med.png
=====
Socket created
Connected to server
<<<<<<<<<<
GET //stackexchange/img/logos/so/so-logo-med.png/ HTTP/1.0
Host: sstatic.net

<<<<<<<<<<
Request sent
so-logo-med.png already exists and will be overwritten
```