

In order to run the program, in the command prompt navigate to the directory that contains the files and run the following:

```
python lab1_server.py
```

This will create the simple webserver. For this program, there are 3 possible outcomes when utilizing localhost:8080

- localhost:8080/index.html which would load the index.html file included in this directory.
- localhost:8080/freecookies.html which would redirect to localhost:8080/index.html and provide a 301 HTTP response message (will see below in the wireshark screen shot).
- Anything else that is not the above two will result in a 404 error message. (i.e localhost:8080/test.html, localhost:8080/index1.html, and localhost:8080 will all result in 404 error messages.

After compiling and running the server and inputting the test cases above, these were my above results from wireshark:

| | | | | | |
|------|------------|-----------|-----------|------|--------------------------------------|
| 480 | 110.286214 | 127.0.0.1 | 127.0.0.1 | HTTP | 692 GET /index.html HTTP/1.1 |
| 484 | 110.286570 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK |
| 494 | 110.580539 | 127.0.0.1 | 127.0.0.1 | HTTP | 615 GET /test.jpg HTTP/1.1 |
| 498 | 110.581165 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK (JPEG JFIF image) |
| 884 | 177.143542 | 127.0.0.1 | 127.0.0.1 | HTTP | 698 GET /freecookies.html HTTP/1.1 |
| 888 | 177.143778 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 301 Moved Permanently |
| 892 | 177.146942 | 127.0.0.1 | 127.0.0.1 | HTTP | 692 GET /index.html HTTP/1.1 |
| 896 | 177.147296 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK |
| 903 | 177.392609 | 127.0.0.1 | 127.0.0.1 | HTTP | 615 GET /test.jpg HTTP/1.1 |
| 907 | 177.393294 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK (JPEG JFIF image) |
| 1150 | 214.283072 | 127.0.0.1 | 127.0.0.1 | HTTP | 689 GET /freedom HTTP/1.1 |
| 1154 | 214.283352 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 404 Not Found |
| 1259 | 230.275918 | 127.0.0.1 | 127.0.0.1 | HTTP | 692 GET /index.html HTTP/1.1 |
| 1263 | 230.276464 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK |
| 1267 | 230.312888 | 127.0.0.1 | 127.0.0.1 | HTTP | 615 GET /test.jpg HTTP/1.1 |
| 1271 | 230.313482 | 127.0.0.1 | 127.0.0.1 | HTTP | 44 HTTP/1.1 200 OK (JPEG JFIF image) |