

Project 1: Web Server

Level Attempted: 100 w/Extra Credit

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CpS 250
April 4, 2020

Program Report

Time Designing, Writing, and Debugging: 42 hours

Requirements Implementation Summary

The following requirements have been implemented:

- All requirements for 80/90/100 w/ Extra Credit Level except for what is documented below.

The following requirements have not been implemented:

- Does not implement 403 error report required for 90 Level.

Bug Summary

1. The program does not report when document is outside root directory, but instead simply reports 404 when file was not found, either in the current working directory or the one specified by the “-r option”.
2. When run with Valgrind and SIGINT signal is sent, depending on the number of clients connected to the server at the time, usually when there are more than 1, Valgrind reports “errors suppressed within contexts”, even though no memory leaks are detected.

Academic Integrity Report

By affixing my signature below, I certify that the accompanying work represents my own intellectual effort. Furthermore, I have received no outside help other than what is documented below and/or in program source code comments.

Melchisedek Dulcio
Signature

Date	Name / Email / URL	Nature of help	Time spent

Other Remarks

My AWS instance was not able to download gcc or make tools causing me to be unable to complete the report on the instance. I spent about 45 minutes attempting to get it to work, but to no avail, and since it was past time to contact you, I decided to complete the report using the WSL. Also on Raspberry Pi, nc command was not found.

Official Test Results

Test 1 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "GET /test1.txt HTTP/1.1\r\n\r\n" | nc
localhost 8080
HTTP/1.1 200 OK
Content-Type: text/plain

This is a text file
Not much here
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 2 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "GET /test2.stuff.jpeg HTTP/1.1\r\n\r\n" | nc
localhost 8080
HTTP/1.1 200 OK
Content-Type: image/jpeg

This is a fake jpeg file

mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 3 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "GET /test3.missing HTTP/1.1\r\n\r\n" | nc
localhost 8080
HTTP/1.1 404 Not Found
Content-Type: text/plain

**Error**: Requested a non-existent file
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 4 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "GET /test4/index.htm HTTP/1.1\r\n\r\n" | nc
localhost 8080
HTTP/1.1 200 OK
Content-Type: text/html

<html><body>
This is an html file
Not much here
</body></html>
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 5 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "OOPS /test1.txt HTTP/1.1\r\n\r\n" | nc
localhost 8080
HTTP/1.0 501 Not Implemented
Content-Type: text/plain
```

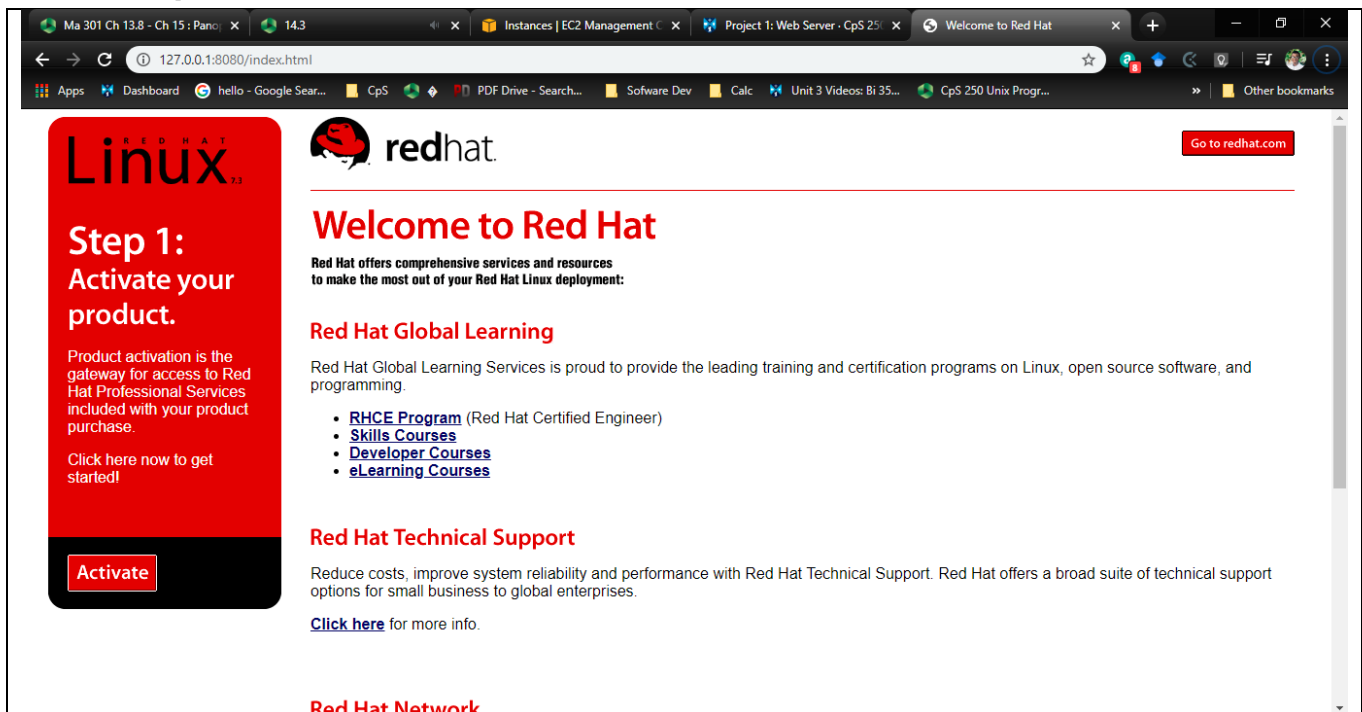
Official Test Case Results

```
**Error**: Unsupported request "verb"
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 6 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ echo -en "ILOVEPYTHON" | nc -N localhost 8080
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$
```

Test 7 Output



Test 8 Output

```
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/CpS
250 Unix Programming/cps250-project1-mdulc928$ ./webserver -p 8080 -r /mnt/c/temp/project1 -h 0.0.0.0
2020-04-11 23:39:35:81:Bound and listening on 0.0.0.0:8080
2020-04-11 23:40:03:81:connection from 127.0.0.1:51485
2020-04-11 23:40:03:81:Number of clients connected: 1
Session ended.
2020-04-11 23:40:03:81:Number of clients connected: 0
2020-04-11 23:40:26:81:connection from 127.0.0.1:51519
2020-04-11 23:40:26:81:Number of clients connected: 1
Session ended.
2020-04-11 23:40:26:81:Number of clients connected: 0
2020-04-11 23:40:36:81:connection from 127.0.0.1:51520
2020-04-11 23:40:36:81:Number of clients connected: 1
Session ended.
2020-04-11 23:40:36:81:Number of clients connected: 0
2020-04-11 23:40:55:81:connection from 127.0.0.1:51527
2020-04-11 23:40:55:81:Number of clients connected: 1
Session ended.
2020-04-11 23:40:55:81:Number of clients connected: 0
```

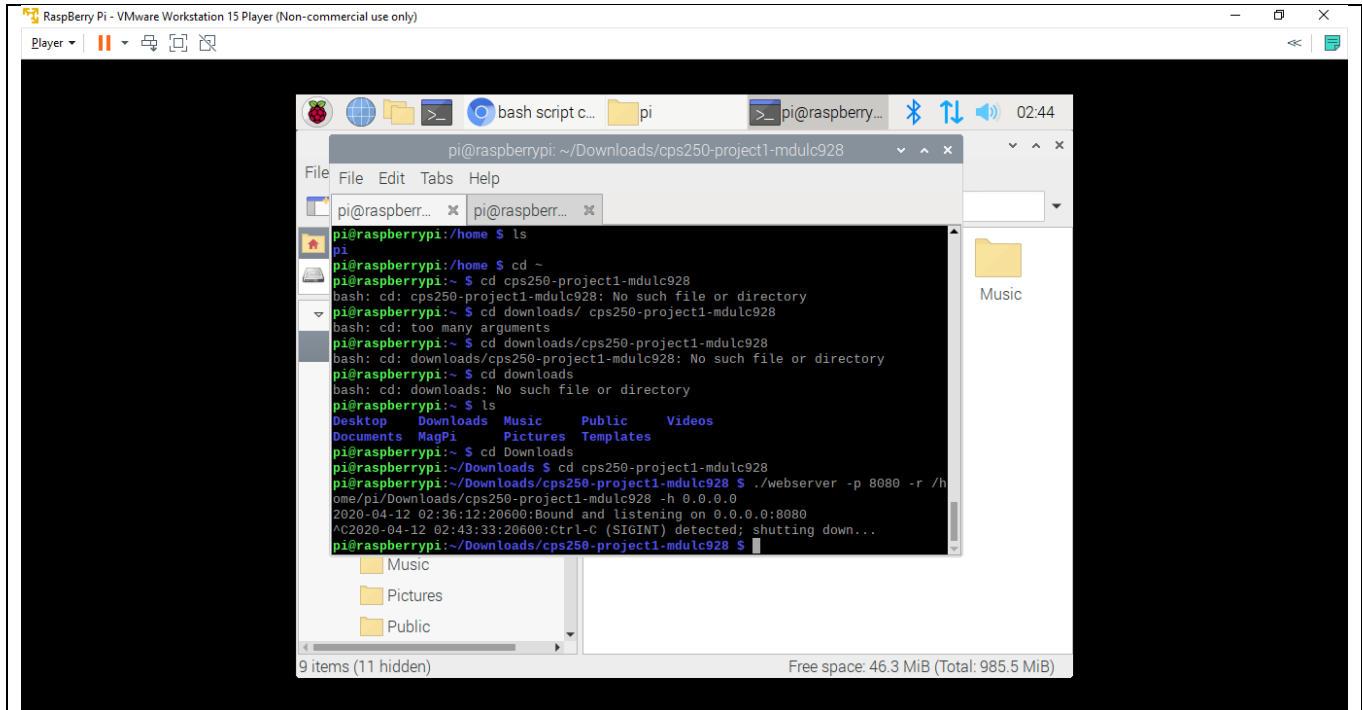
Official Test Case Results

[illegible]

Official Test Case Results

```
2020-04-11 23:44:22:81:Number of clients connected: 2
2020-04-11 23:44:37:125:I/O Error from: 127.0.0.1:51667
2020-04-11 23:44:37:126:I/O Error from: 127.0.0.1:51668
    Session ended.
    Session ended.
2020-04-11 23:44:37:81:Number of clients connected: 1
2020-04-11 23:44:37:81:Number of clients connected: 0
^C2020-04-11 23:44:54:81:Ctrl-C (SIGINT) detected; shutting down...
mdulc928@DESKTOP-7IE5KTH:/mnt/c/Users/Dulcio/OneDrive - Bob Jones University/Sophomore/Spring 2020/Cps
250 Unix Programming/cps250-project1-mdulc928$
```

Test Case 9



My Test Cases

Test Case 1 (Expected)

(Place a test case here and format using Courier New font, size 8)

Test Case 1 (Actual)

(Copy and paste the input/output of your program here and format using **Courier New font, size 8**)

Test Case 2 (Expected)

(Place a test case here and format using **Courier New font, size 8**)

Test Case 2 (Actual)

(Copy and paste the input/output of your program here and format using Courier New font, size 8)

Test Case 3 (Expected)

(Place a test case here and format using Courier New font, size 8)

Test Case 3 (Actual)

(Copy and paste the input/output of your program here and format using Courier New font, size 8)