

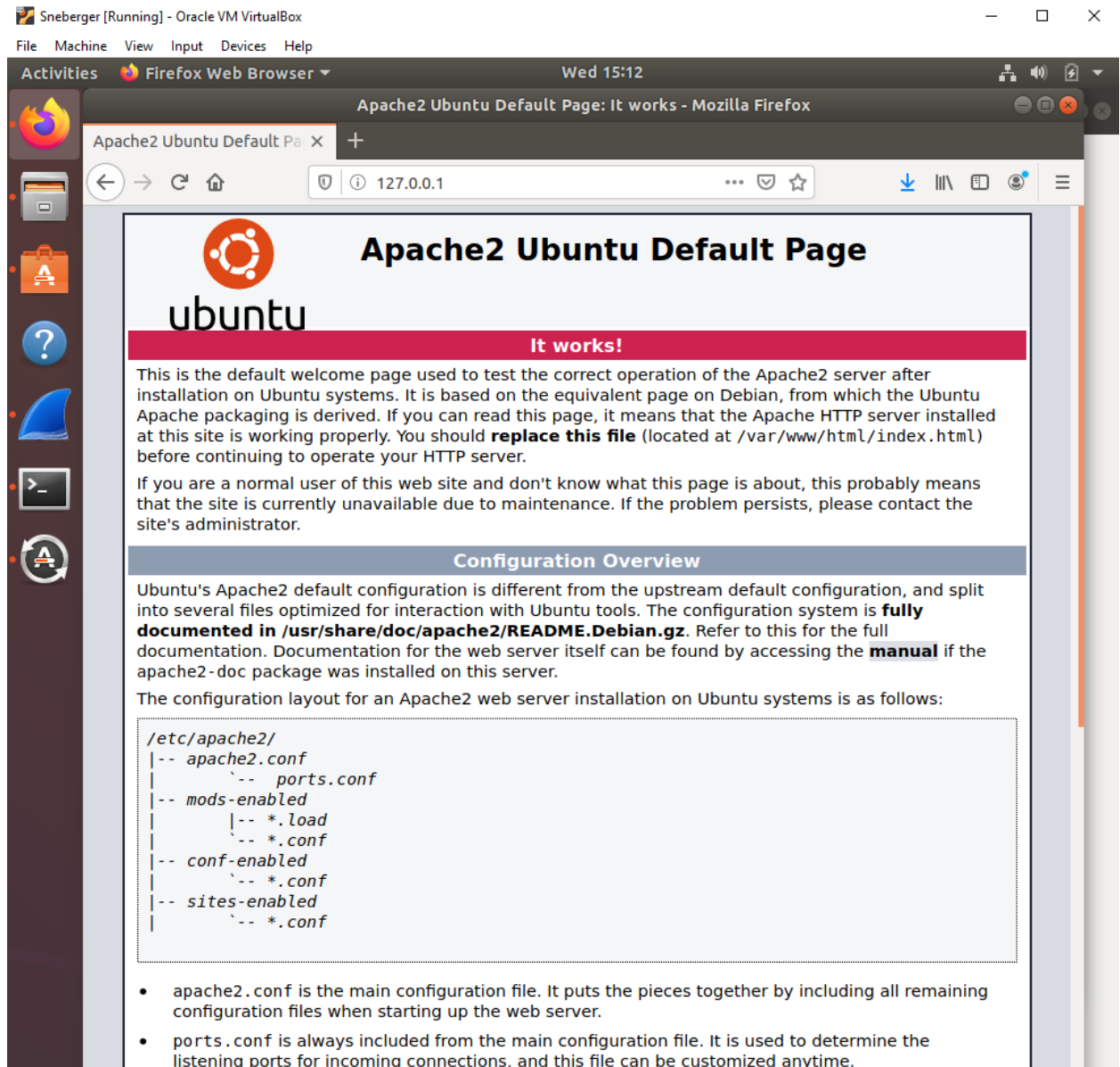
Michael Sneberger

ASU ID: 1000001544

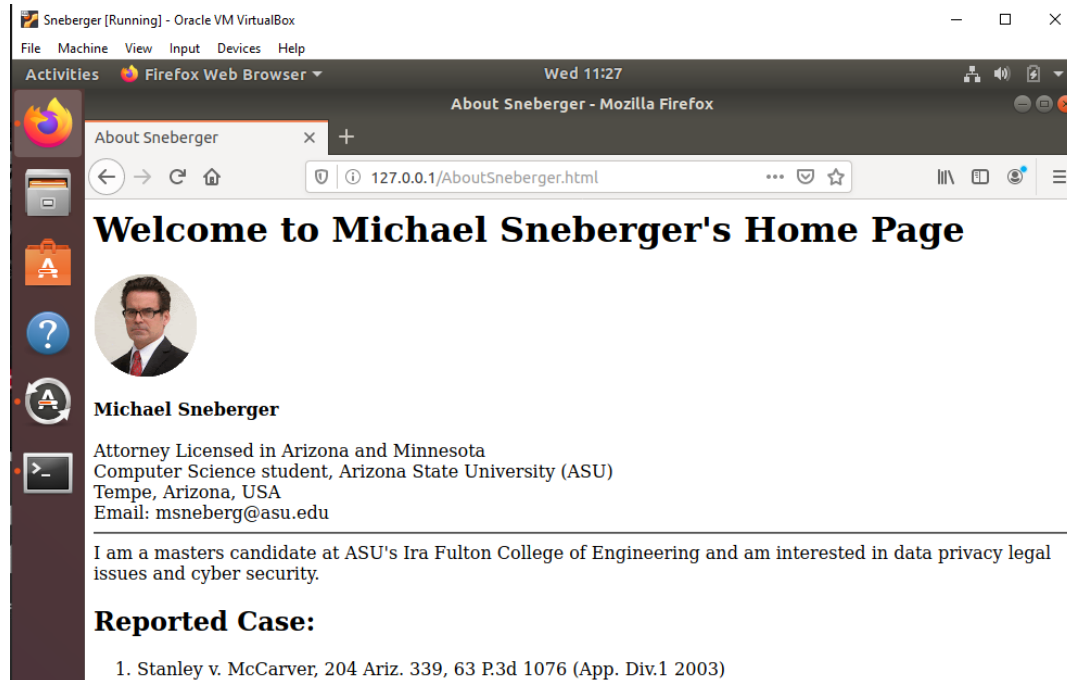
Assignment 5:

[EACH TASK STARTS ON A NEW PAGE SO PLEASE SCROLL](#)

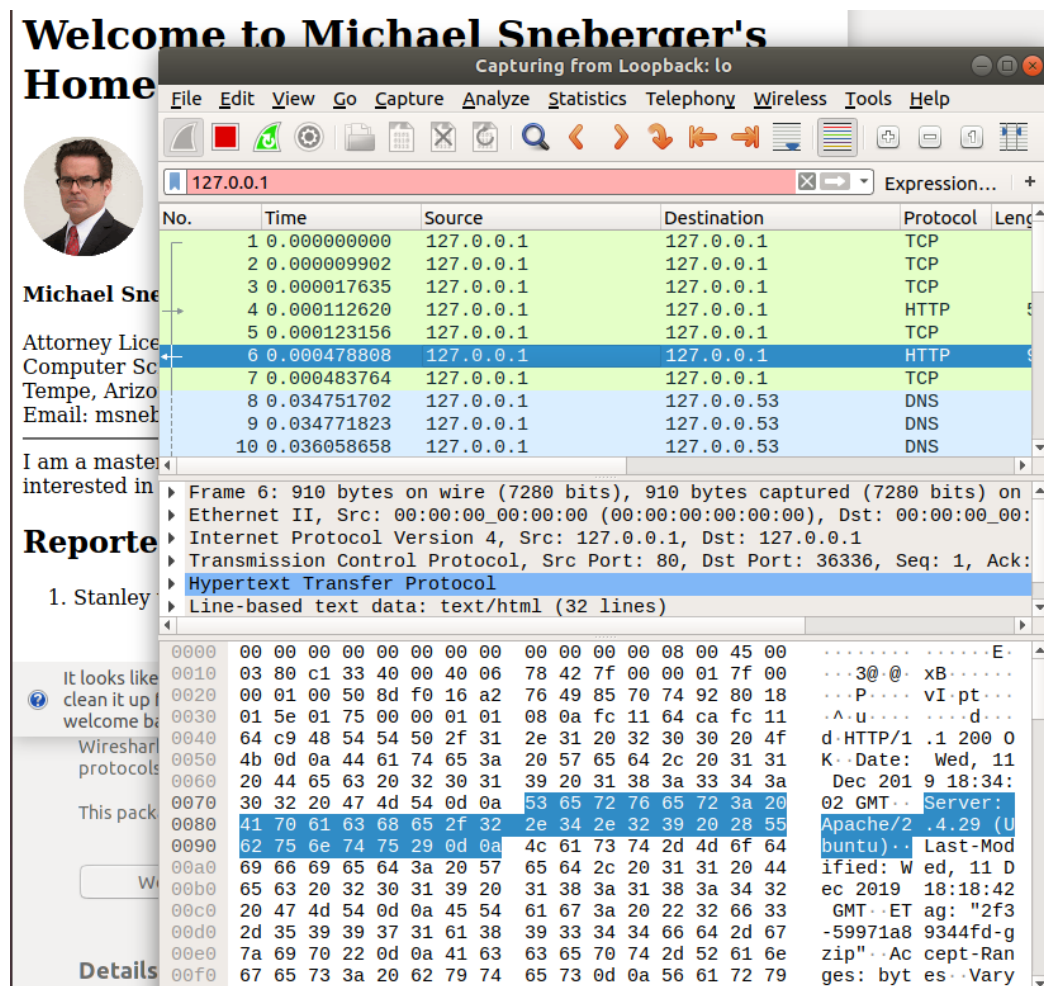
Task 1: Setup a Web Server – [here is Apache web server on my Ubuntu Virtual Machine](#)



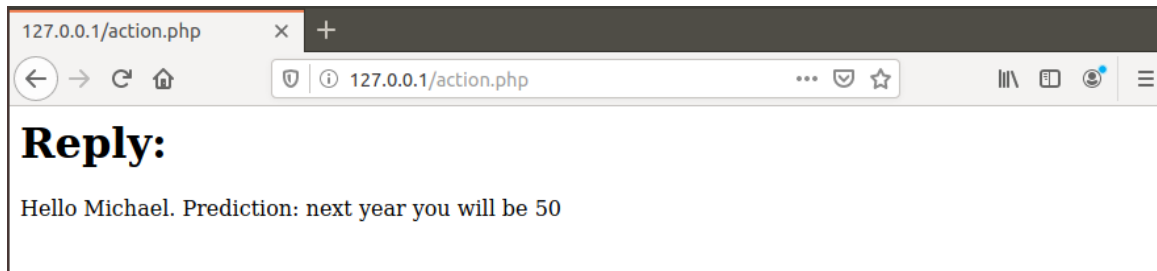
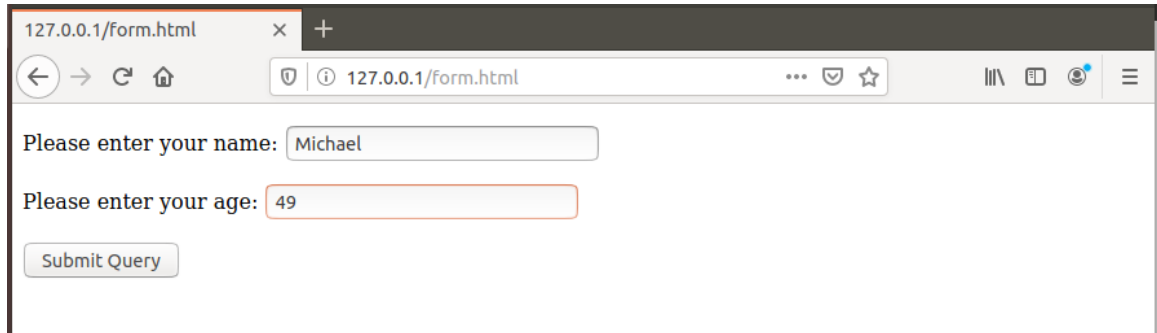
**Task 2: a) Serving a Static Web Page – here is my static personal web page accessed via Firefox on my VM**



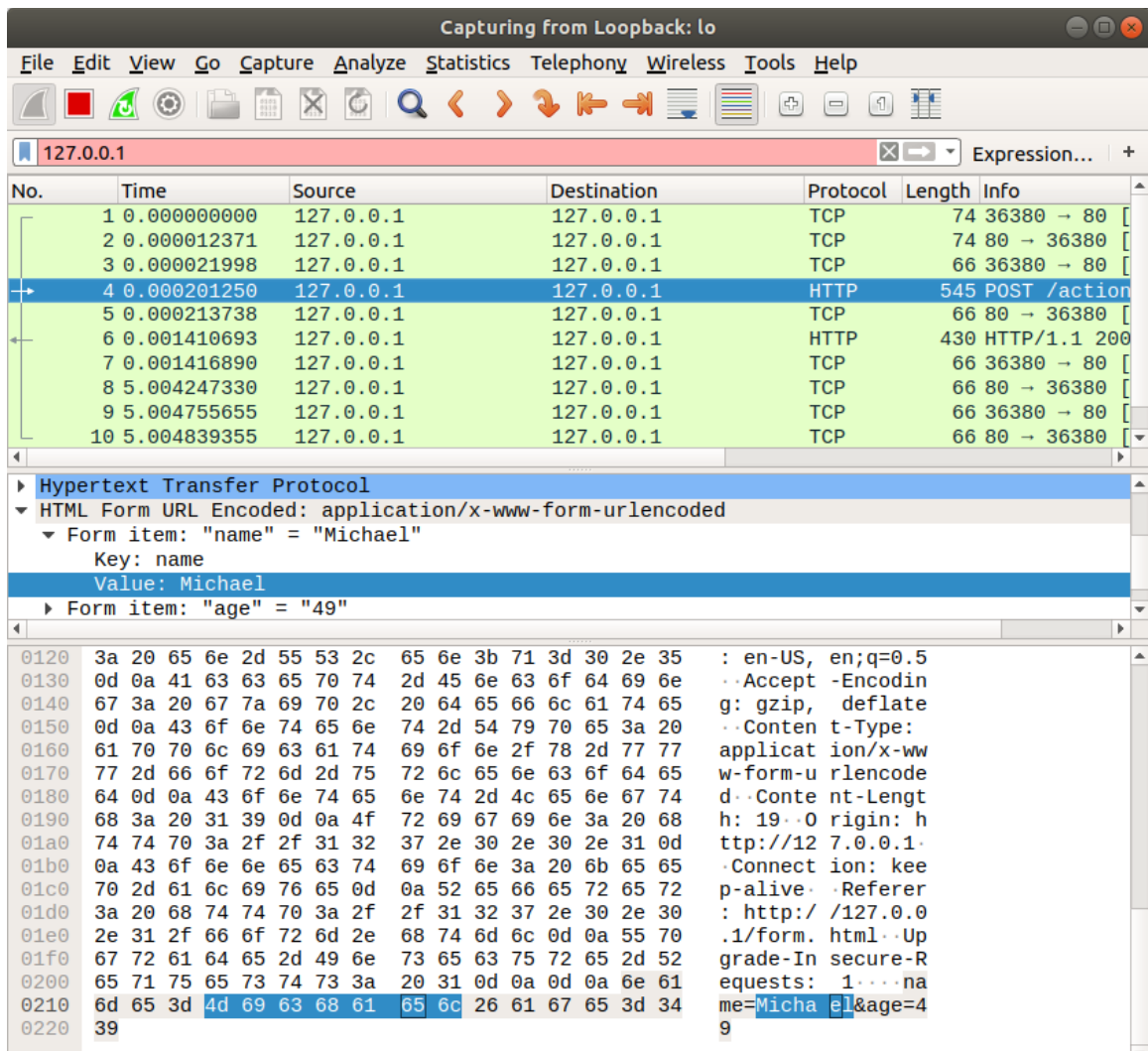
**Task 2: b) Wireshark Capture of http Packets – here is Wireshark capturing http traffic with my Apache web server**



**Task 3: Server Side Script for Dynamic Content Generation – here are screenshots of my running the PHP function.**



**Here is a screenshot of Wireshark capturing my entry of data into the PHP function:**



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	127.0.0.1	127.0.0.1	TCP	74	36380 → 80 [
2	0.000012371	127.0.0.1	127.0.0.1	TCP	74	80 → 36380 [
3	0.000021998	127.0.0.1	127.0.0.1	TCP	66	36380 → 80 [
4	0.000201250	127.0.0.1	127.0.0.1	HTTP	545	POST /action
5	0.000213738	127.0.0.1	127.0.0.1	TCP	66	80 → 36380 [
6	0.001410693	127.0.0.1	127.0.0.1	HTTP	430	HTTP/1.1 200
7	0.001416890	127.0.0.1	127.0.0.1	TCP	66	36380 → 80 [
8	5.004247330	127.0.0.1	127.0.0.1	TCP	66	80 → 36380 [
9	5.004755655	127.0.0.1	127.0.0.1	TCP	66	36380 → 80 [
10	5.004839355	127.0.0.1	127.0.0.1	TCP	66	80 → 36380 [

Hypertext Transfer Protocol	
HTML Form URL Encoded: application/x-www-form-urlencoded	
Form item: "name" = "Michael"	
Key: name	
Value: Michael	
Form item: "age" = "49"	

0120	3a 20 65 6e 2d 55 53 2c 65 6e 3b 71 3d 30 2e 35	: en-US, en;q=0.5
0130	0d 0a 41 63 63 65 70 74 2d 45 6e 63 6f 64 69 6e	..Accept -Encodin
0140	67 3a 20 67 7a 69 70 2c 20 64 65 66 6c 61 74 65	g: gzip, deflate
0150	0d 0a 43 6f 6e 74 65 6e 74 2d 54 79 70 65 3a 20	..Conten t-Type:
0160	61 70 70 6c 69 63 61 74 69 6f 6e 2f 78 2d 77 77	applicat ion/x-ww
0170	77 2d 66 6f 72 6d 2d 75 72 6c 65 6e 63 6f 64 65	w-form-u rlencode
0180	64 0d 0a 43 6f 6e 74 65 6e 74 2d 4c 65 6e 67 74	d..Conte nt-Lengt
0190	68 3a 20 31 39 0d 0a 4f 72 69 67 69 6e 3a 20 68	h: 19..0 rigin: h
01a0	74 74 70 3a 2f 2f 31 32 37 2e 30 2e 30 2e 31 0d	ttp://12 7.0.0.1.
01b0	0a 43 6f 6e 6e 65 63 74 69 6f 6e 3a 20 6b 65 65	.Connect ion: kee
01c0	70 2d 61 6c 69 76 65 0d 0a 52 65 66 65 72 65 72	p-alive. Referer
01d0	3a 20 68 74 74 70 3a 2f 2f 31 32 37 2e 30 2e 30	: http:/ /127.0.0
01e0	2e 31 2f 66 6f 72 6d 2e 68 74 6d 6c 0d 0a 55 70	.1/form. html..Up
01f0	67 72 61 64 65 2d 49 6e 73 65 63 75 72 65 2d 52	grade-In secure-R
0200	65 71 75 65 73 74 73 3a 20 31 0d 0a 0d 0a 6e 61	equests: 1...na
0210	6d 65 3d 4d 69 63 68 61 65 6c 26 61 67 65 3d 34	me=Micha el&age=4
0220	39	9

#### Task 4: Client Side Script for Dynamic Content Generation – here is the side script loaded

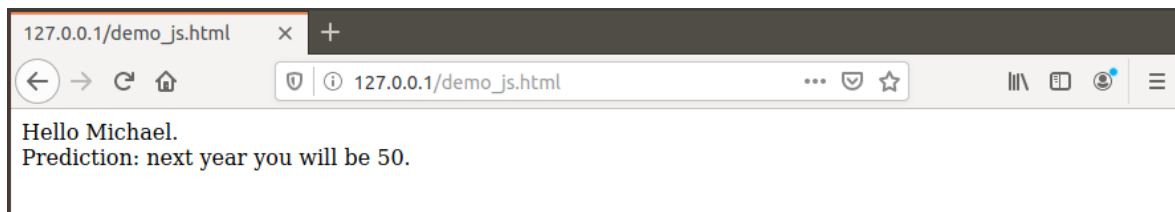


127.0.0.1/demo\_js.html

Please enter your name:

Please enter your age:

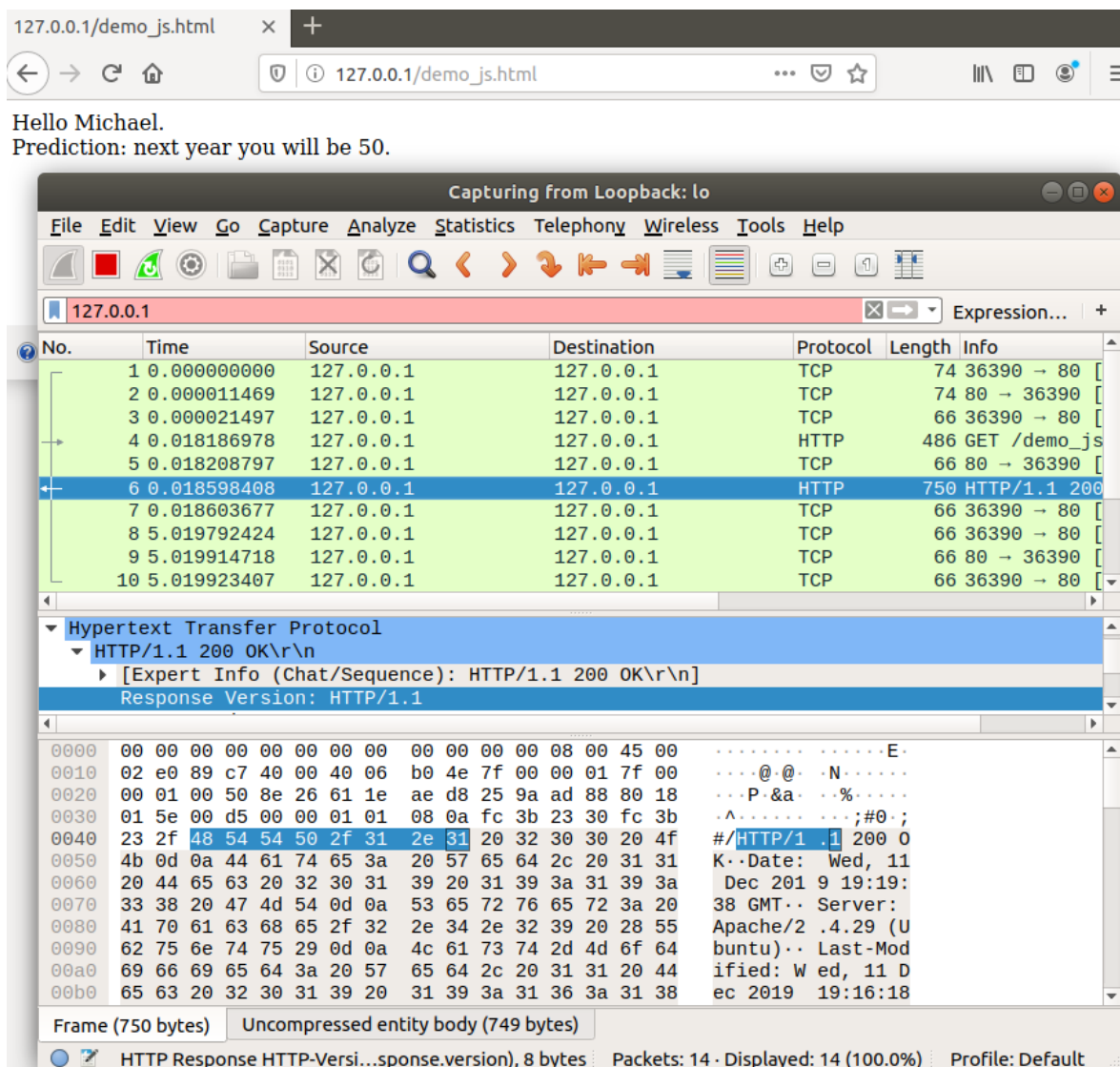
And here is the result of running the side script



127.0.0.1/demo\_js.html

Hello Michael.  
Prediction: next year you will be 50.

Here is a Wireshark capture of the http packets showing the http activity and that no packets went out when the script was run.



127.0.0.1/demo\_js.html

Hello Michael.  
Prediction: next year you will be 50.

Capturing from Loopback: lo

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

127.0.0.1

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	127.0.0.1	127.0.0.1	TCP	74	36390 → 80 [
2	0.000011469	127.0.0.1	127.0.0.1	TCP	74	80 → 36390 [
3	0.000021497	127.0.0.1	127.0.0.1	TCP	66	36390 → 80 [
4	0.018186978	127.0.0.1	127.0.0.1	HTTP	486	GET /demo_js
5	0.018208797	127.0.0.1	127.0.0.1	TCP	66	80 → 36390 [
6	0.018598408	127.0.0.1	127.0.0.1	HTTP	750	HTTP/1.1 200
7	0.018603677	127.0.0.1	127.0.0.1	TCP	66	36390 → 80 [
8	5.019792424	127.0.0.1	127.0.0.1	TCP	66	36390 → 80 [
9	5.019914718	127.0.0.1	127.0.0.1	TCP	66	80 → 36390 [
10	5.019923407	127.0.0.1	127.0.0.1	TCP	66	36390 → 80 [

Hypertext Transfer Protocol

HTTP/1.1 200 OK\r\n

[Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]

Response Version: HTTP/1.1

0000 00 00 00 00 00 00 00 00 00 00 00 08 00 45 00 .....E.

0010 02 e0 89 c7 40 00 40 06 b0 4e 7f 00 00 01 7f 00 ...@-@-N.....

0020 00 01 00 50 8e 26 61 1e ae d8 25 9a ad 88 80 18 ...P&a...%....

0030 01 5e 00 d5 00 00 01 01 08 0a fc 3b 23 30 fc 3b ...^.....;#0;.

0040 23 2f 48 54 54 50 2f 31 2e 31 20 32 30 30 20 4f #/HTTP/1.1 200 O

0050 4b 0d 0a 44 61 74 65 3a 20 57 65 64 2c 20 31 31 K..Date: Wed, 11

0060 20 44 65 63 20 32 30 31 39 20 31 39 3a 31 39 3a Dec 201 9 19:19:

0070 33 38 20 47 4d 54 0d 0a 53 65 72 76 65 72 3a 20 38 GMT.. Server:

0080 41 70 61 63 68 65 2f 32 2e 34 2e 32 39 20 28 55 Apache/2 .4.29 (U

0090 62 75 6e 74 75 29 0d 0a 4c 61 73 74 2d 4d 6f 64 buntu).. Last-Mod

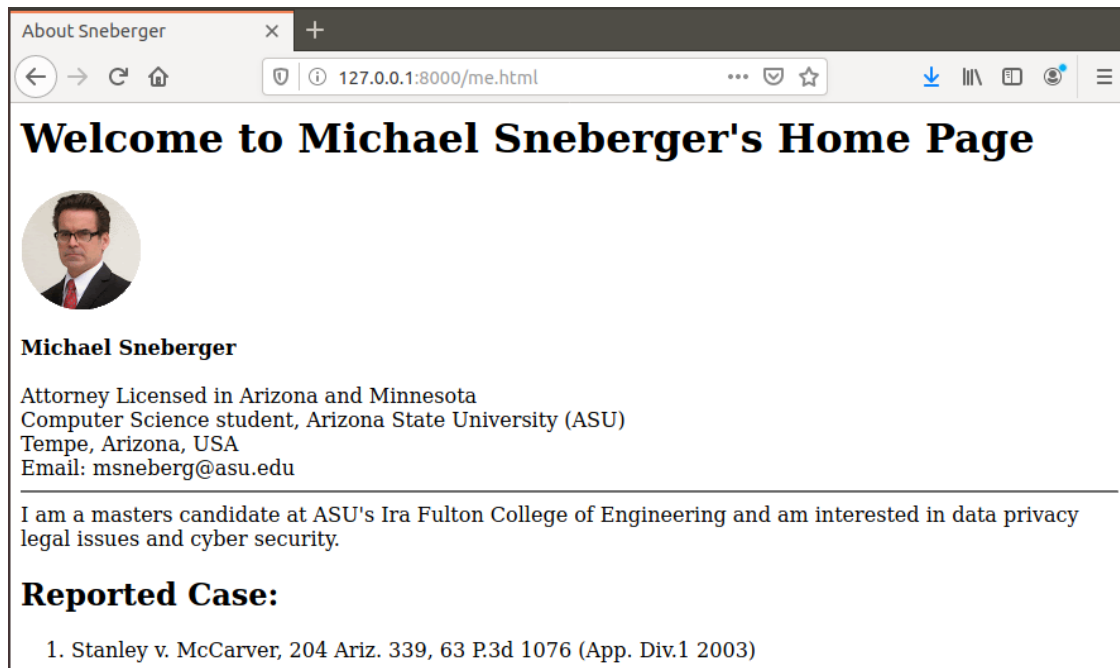
00a0 69 66 69 65 64 3a 20 57 65 64 2c 20 31 31 20 44 ified: W ed, 11 D

00b0 65 63 20 32 30 31 39 20 31 39 3a 31 36 3a 31 38 ec 2019 19:16:18

Frame (750 bytes) Uncompressed entity body (749 bytes)

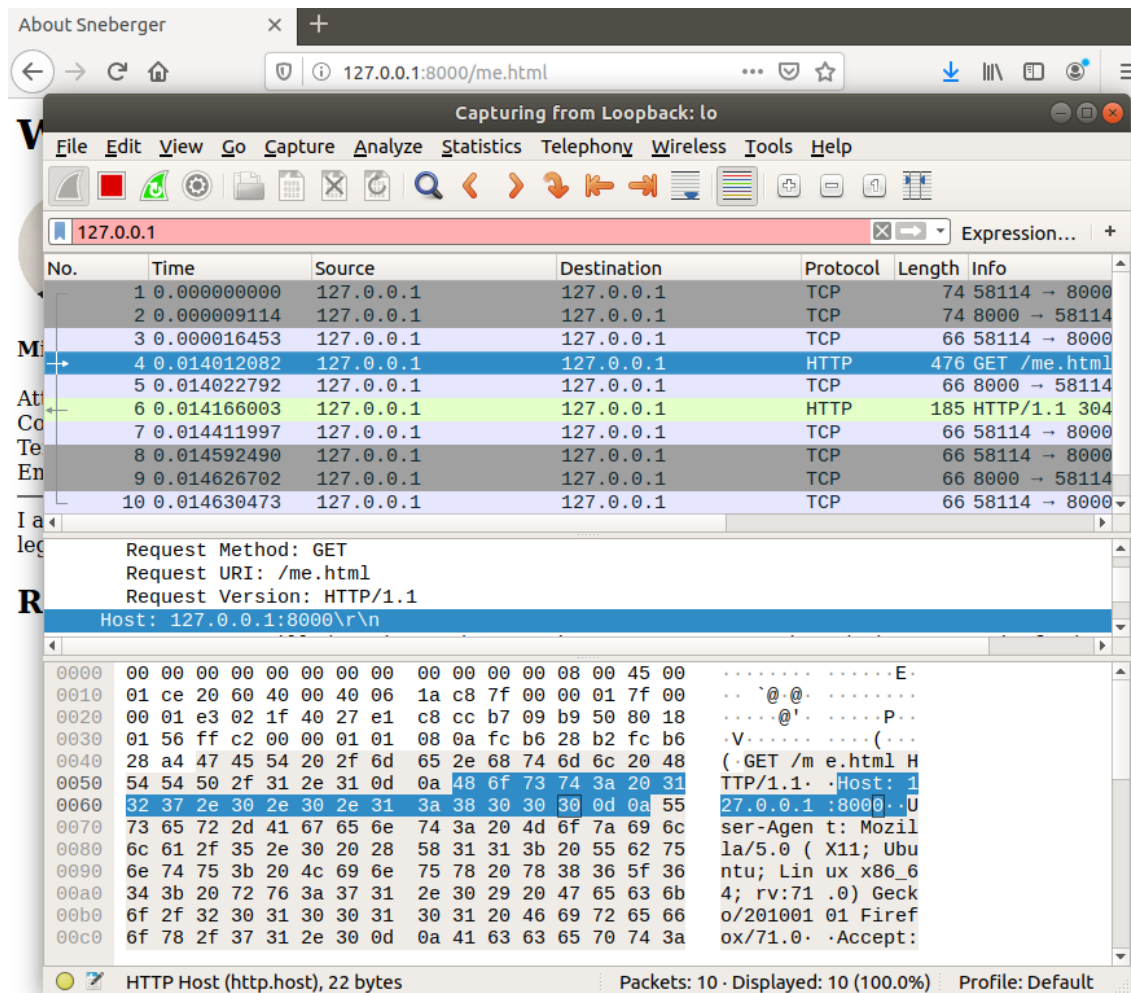
HTTP Response HTTP-Versi...sponse.version), 8 bytes Packets: 14 · Displayed: 14 (100.0%) Profile: Default

Task 5: Serving Web Content Using a Program – here is screen shot of browser running the server and showing the web page



The screenshot shows a web browser window with the address bar displaying `127.0.0.1:8000/me.html`. The page content includes a profile picture of Michael Sneberger, his name, and his professional details: Attorney Licensed in Arizona and Minnesota, Computer Science student at Arizona State University (ASU) in Tempe, Arizona, USA, with email `msneberg@asu.edu`. A bio states he is a masters candidate at ASU's Ira Fulton College of Engineering and is interested in data privacy, legal issues, and cyber security. A section titled "Reported Case:" lists "1. Stanley v. McCarver, 204 Ariz. 339, 63 P.3d 1076 (App. Div.1 2003)".

Here is a Wireshark screen shot showing the http traffic on port 8000 to show the page is not running on the Apache server.



The screenshot shows a Wireshark packet capture window titled "Capturing from Loopback: lo". The packet list shows a series of TCP and HTTP packets. The selected packet (No. 6) is an HTTP GET request to `/me.html` from `127.0.0.1` to `127.0.0.1` on port 8000. The packet details pane shows the request method as GET, the URI as `/me.html`, and the version as HTTP/1.1. The packet bytes pane shows the raw data of the request, including the host header `Host: 127.0.0.1:8000\r\n`.



**Task 6: Retrieving Web Content Using a Program – here is a screenshot of the command line window running the client**

```
msneberger@Ubuntu-VirtualBox:~/CSE434/Assign5$ ./my_web_client 127.0.0.1/me.html
<html>
<head> <title> AboutSneberger </title> </head>

<body>
<h1> Welcome to Michael Sneberger's Home Page </h1>
 <br><br>

<b> Michael Sneberger </b>

<br>
<br>
Attorney Licensed in Arizona and Minnesota
<br>
Computer Science student, Arizona State University (ASU)<br>
Tempe, Arizona, USA<br>
Email: msneberg@asu.edu<br>

<hr>

I am a masters candidate at ASU's Ira Fulton College of Engineering and am interested in data
privacy legal issues and cyber security.

<h2> Reported Case: </h2>

<ol>
<li> Stanley v. McCarver, 204 Ariz. 339, 63 P.3d 1076 (App. Div.1 2003) </li>
</ol>
</body>
</html>
msneberger@Ubuntu-VirtualBox:~/CSE434/Assign5$
```

**And here is a screenshot of Wireshark when I ran the client**

The screenshot shows the Wireshark network protocol analyzer. The top pane displays a list of captured packets. The selected packet is a GET request from 127.0.0.1 to 127.0.0.1 on port 80. The packet details pane shows the structure of the HTML response, including the title 'AboutSneberger' and the body content. The packet bytes pane shows the raw data of the packet.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	127.0.0.1	127.0.0.1	TCP	74	36898 → 80 [
2	0.000011272	127.0.0.1	127.0.0.1	TCP	74	80 → 36898 [
3	0.000019579	127.0.0.1	127.0.0.1	TCP	66	36898 → 80 [
4	0.000037191	127.0.0.1	127.0.0.1	HTTP	127	GET /me.html
5	0.000046927	127.0.0.1	127.0.0.1	TCP	66	80 → 36898 [
6	0.000360261	127.0.0.1	127.0.0.1	HTTP	1072	HTTP/1.1 200
7	0.000366725	127.0.0.1	127.0.0.1	TCP	66	36898 → 80 [
8	0.000557062	127.0.0.1	127.0.0.1	TCP	66	36898 → 80 [
9	0.000657530	127.0.0.1	127.0.0.1	TCP	66	80 → 36898 [
10	0.000664320	127.0.0.1	127.0.0.1	TCP	66	36898 → 80 [

File Data: 754 bytes  
Line-based text data: text/html (32 lines)  
<html>\r\n<head> <title> AboutSneberger </title> </head>\r\n