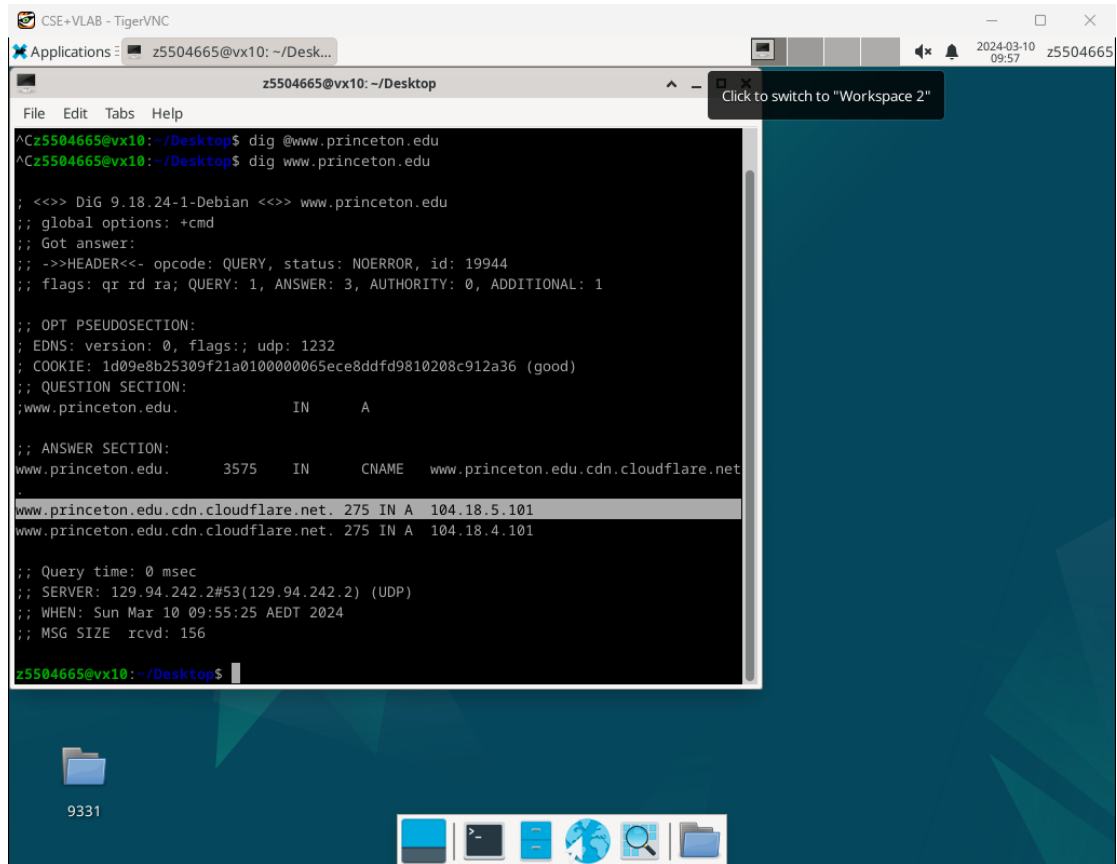


Lab3

Exercise 3

Q1



The screenshot shows a TigerVNC window titled "CSE+VLAB - TigerVNC". The desktop environment is a Linux distribution with a dark blue background. A terminal window is open, displaying the output of a `dig` command. The terminal prompt is `z5504665@vx10: ~/Desktop\$`. The output of the command is as follows:

```
z5504665@vx10:~/Desktop$ dig @www.princeton.edu
z5504665@vx10:~/Desktop$ dig www.princeton.edu

; <<>> DiG 9.18.24-1-Debian <<>> www.princeton.edu
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 19944
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 1d09e8b25309f21a010000065ece8ddfd9810208c912a36 (good)
;; QUESTION SECTION:
;www.princeton.edu.                IN      A

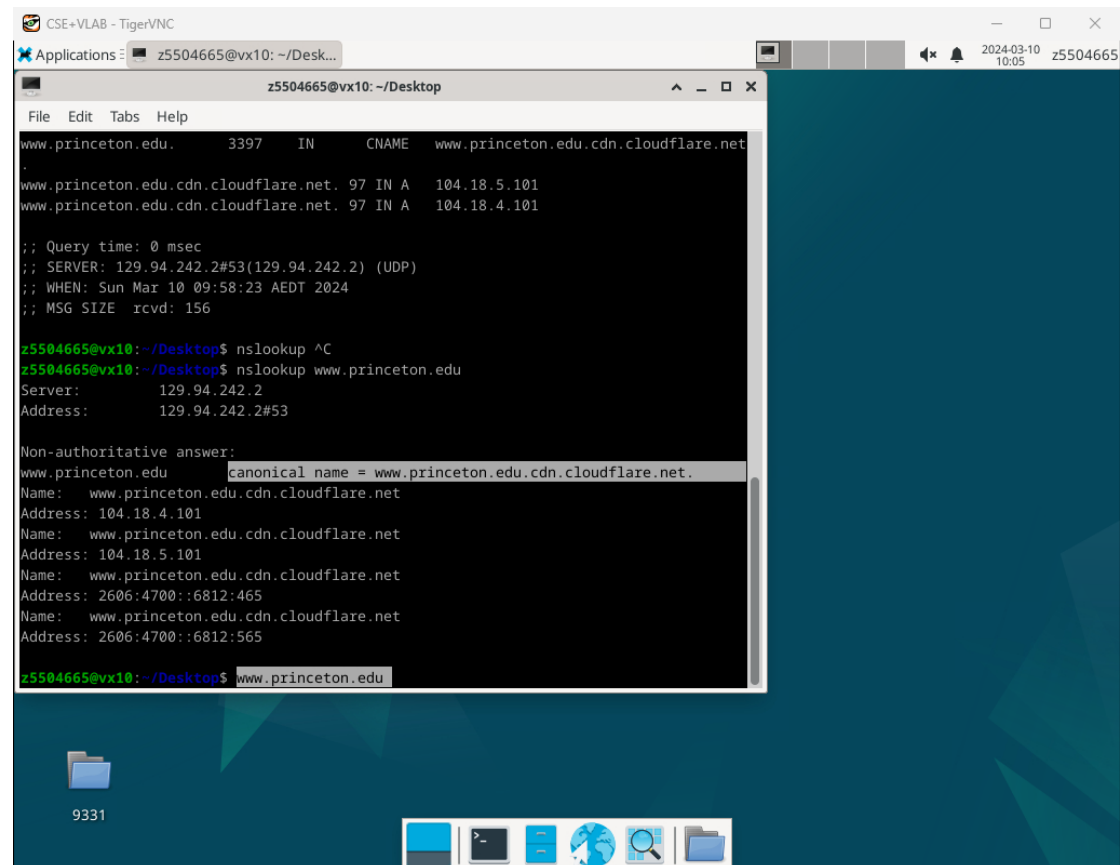
;; ANSWER SECTION:
www.princeton.edu. 3575 IN CNAME www.princeton.edu.cdn.cloudflare.net
www.princeton.edu.cdn.cloudflare.net. 275 IN A 104.18.5.101
www.princeton.edu.cdn.cloudflare.net. 275 IN A 104.18.4.101

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)
;; WHEN: Sun Mar 10 09:55:25 AEDT 2024
;; MSG SIZE rcvd: 156

z5504665@vx10:~/Desktop$
```

The ip addresses of www.princeton.edu are 104.18.5.101 and 104.18.4.101. And type of DNS query is A type. Which means this query will return a 32-bit IPv4 address, most commonly used to map hostnames to an IP address of the host, but it is also used for DNSBLs, storing subnet masks in RFC 1101, etc.

Q2



```
CSE+VLAB - TigerVNC
Applications: z5504665@vx10: ~/Desk...
z5504665@vx10: ~/Desktop
File Edit Tabs Help
www.princeton.edu. 3397 IN CNAME www.princeton.edu.cdn.cloudflare.net
www.princeton.edu.cdn.cloudflare.net. 97 IN A 104.18.5.101
www.princeton.edu.cdn.cloudflare.net. 97 IN A 104.18.4.101
;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)
;; WHEN: Sun Mar 10 09:58:23 AEDT 2024
;; MSG SIZE rcvd: 156
z5504665@vx10:~/Desktop$ nslookup ^C
z5504665@vx10:~/Desktop$ nslookup www.princeton.edu
Server: 129.94.242.2
Address: 129.94.242.2#53

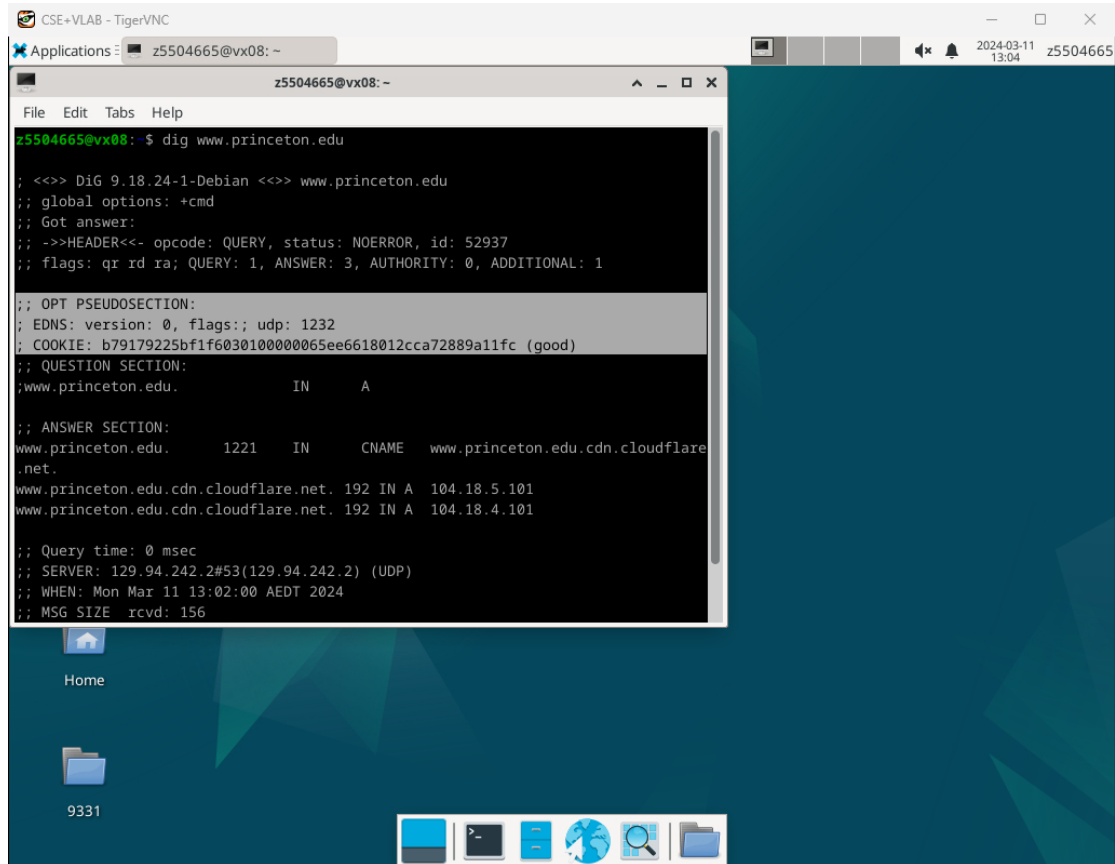
Non-authoritative answer:
www.princeton.edu canonical name = www.princeton.edu.cdn.cloudflare.net.
Name: www.princeton.edu.cdn.cloudflare.net
Address: 104.18.4.101
Name: www.princeton.edu.cdn.cloudflare.net
Address: 104.18.5.101
Name: www.princeton.edu.cdn.cloudflare.net
Address: 2606:4700::6812:465
Name: www.princeton.edu.cdn.cloudflare.net
Address: 2606:4700::6812:565
z5504665@vx10:~/Desktop$ www.princeton.edu
```

The canonical name of the Princeton webserver is `www.princeton.edu.cdn.cloudflare.net`.

The one reason for having alias is load balancing, this sever may accept a large amount of traffic, by having these alias can help ensure the website remains responsive and available even during periods of high demand.

And another reason is to make the server have a brief and Memorable name for users.

Q3



```
z5504665@vx08: ~  
File Edit Tabs Help  
z5504665@vx08:~$ dig www.princeton.edu  
  
;<<>> DiG 9.18.24-1-Debian <<>> www.princeton.edu  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 52937  
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
;; EDNS: version: 0, flags:; udp: 1232  
;; COOKIE: b79179225bf1f6030100000065ee6618012cca72889a11fc (good)  
;; QUESTION SECTION:  
;www.princeton.edu.          IN      A  
  
;; ANSWER SECTION:  
www.princeton.edu.          1221    IN      CNAME   www.princeton.edu.cdn.cloudflare.net.  
www.princeton.edu.cdn.cloudflare.net. 192 IN A    104.18.5.101  
www.princeton.edu.cdn.cloudflare.net. 192 IN A    104.18.4.101  
  
;; Query time: 0 msec  
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)  
;; WHEN: Mon Mar 11 13:02:00 AEDT 2024  
;; MSG SIZE rcvd: 156
```

EDNS: EDNS stands for "Extension Mechanisms for DNS" (Domain Name System). It's a set of extensions to DNS that enable DNS clients (such as web browsers or other applications) and servers to communicate additional information that goes beyond the traditional DNS protocol limitations.

EDNS: version: 0, flags:; udp: 1232 indicates that EDNS version 0 is used, with no specific flags set, and the maximum UDP packet size supported by the responder is 1232 bytes.

COOKIES: In the context of DNS, a COOKIE is often used as part of DNS Cookies, which is a mechanism for mitigating DNS-based attacks such as amplification attacks or cache poisoning. The COOKIE serves as a token to validate the authenticity of DNS transactions and to establish or maintain stateful communication between the client and server.

COOKIE:b79179225bf1f6030100000065ee6618012cca72889a11fc (good) is a randomly generated token (COOKIE) used for stateful tracking or verification of DNS transactions. In this case, "(good)" suggests that the cookie is valid.

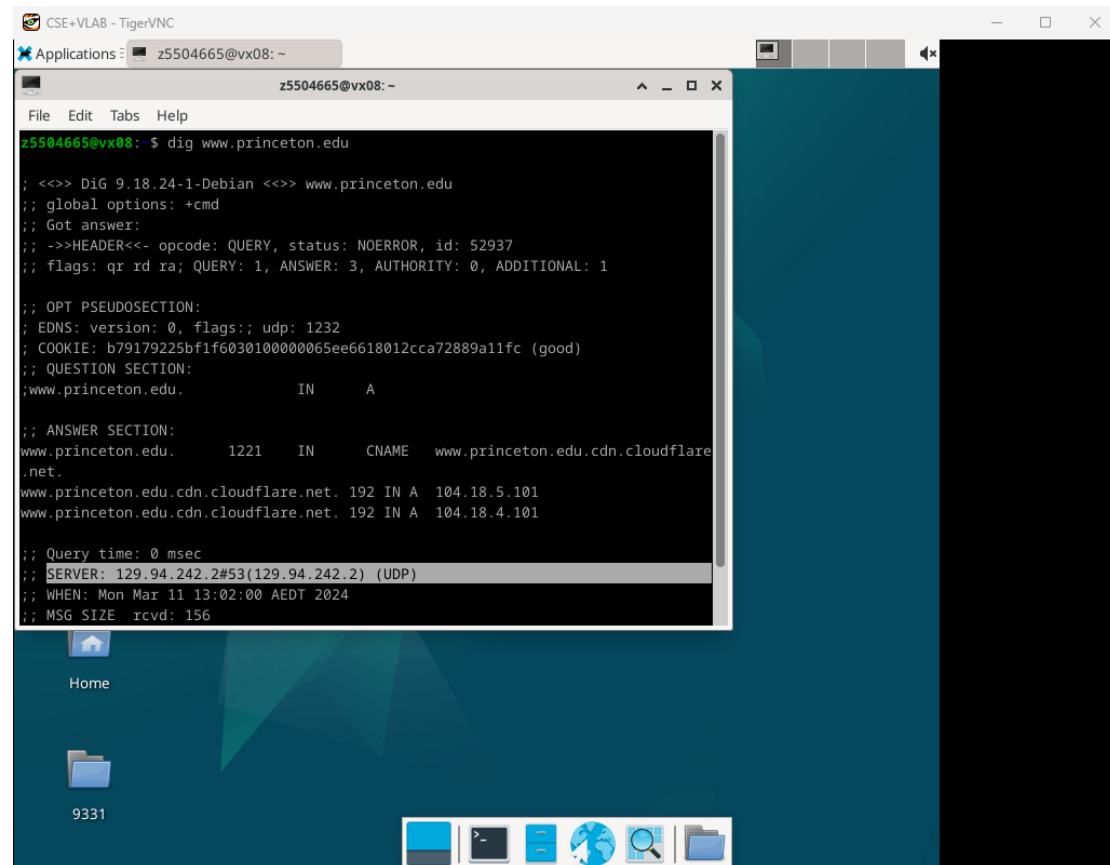
Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)

:: WHEN: Mon Mar 11 13:02:00 AEDT 2024

:: MSG SIZE rcvd: 156

These message are some information of response including message size,time ,server ip and server type.

Q4

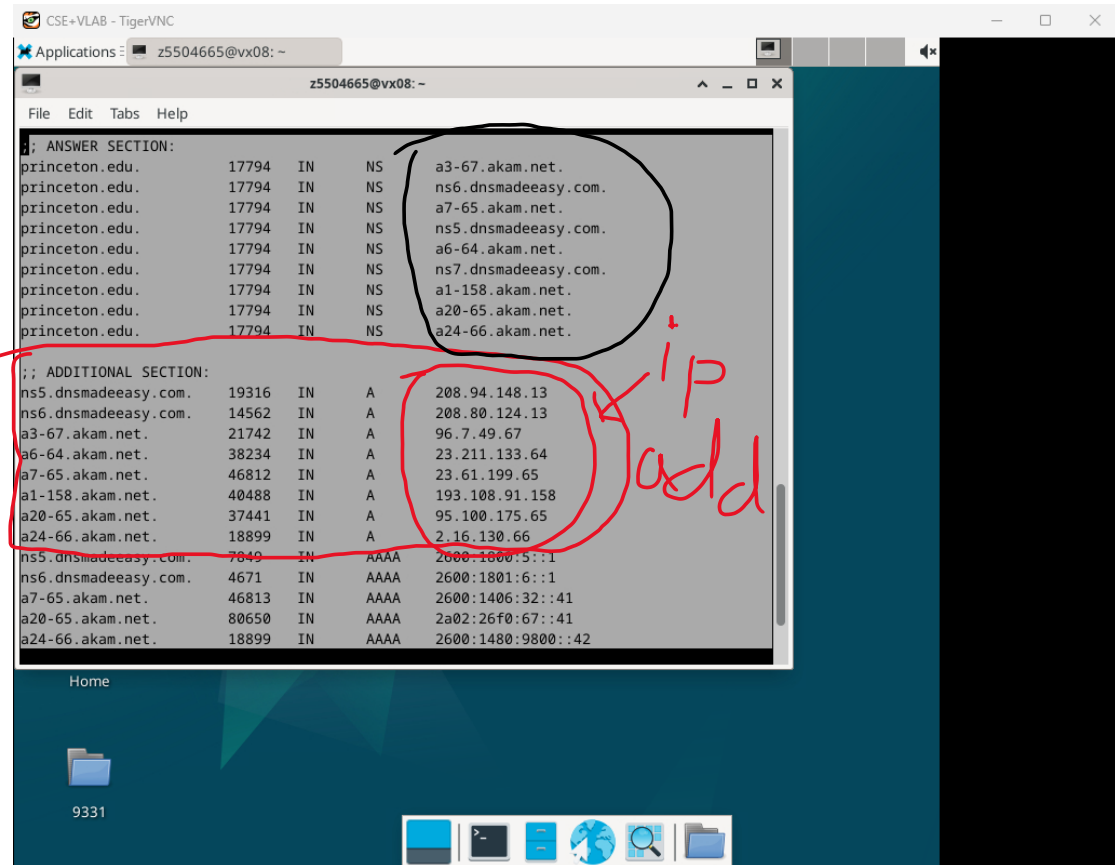


```
z5504665@vx08: ~  
File Edit Tabs Help  
z5504665@vx08: ~$ dig www.princeton.edu  
  
; <<>> DiG 9.18.24-1-Debian <<>> www.princeton.edu  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 52937  
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
;; EDNS: version: 0, flags:; udp: 1232  
;; COOKIE: b79179225bf1f6030100000065ee6618012cca72889a11fc (good)  
;; QUESTION SECTION:  
;www.princeton.edu. IN A  
  
;; ANSWER SECTION:  
www.princeton.edu. 1221 IN CNAME www.princeton.edu.cdn.cloudflare.net.  
www.princeton.edu.cdn.cloudflare.net. 192 IN A 104.18.5.101  
www.princeton.edu.cdn.cloudflare.net. 192 IN A 104.18.4.101  
  
;; Query time: 0 msec  
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)  
;; WHEN: Mon Mar 11 13:02:00 AEDT 2024  
;; MSG SIZE rcvd: 156
```

It is 129.94.242.2

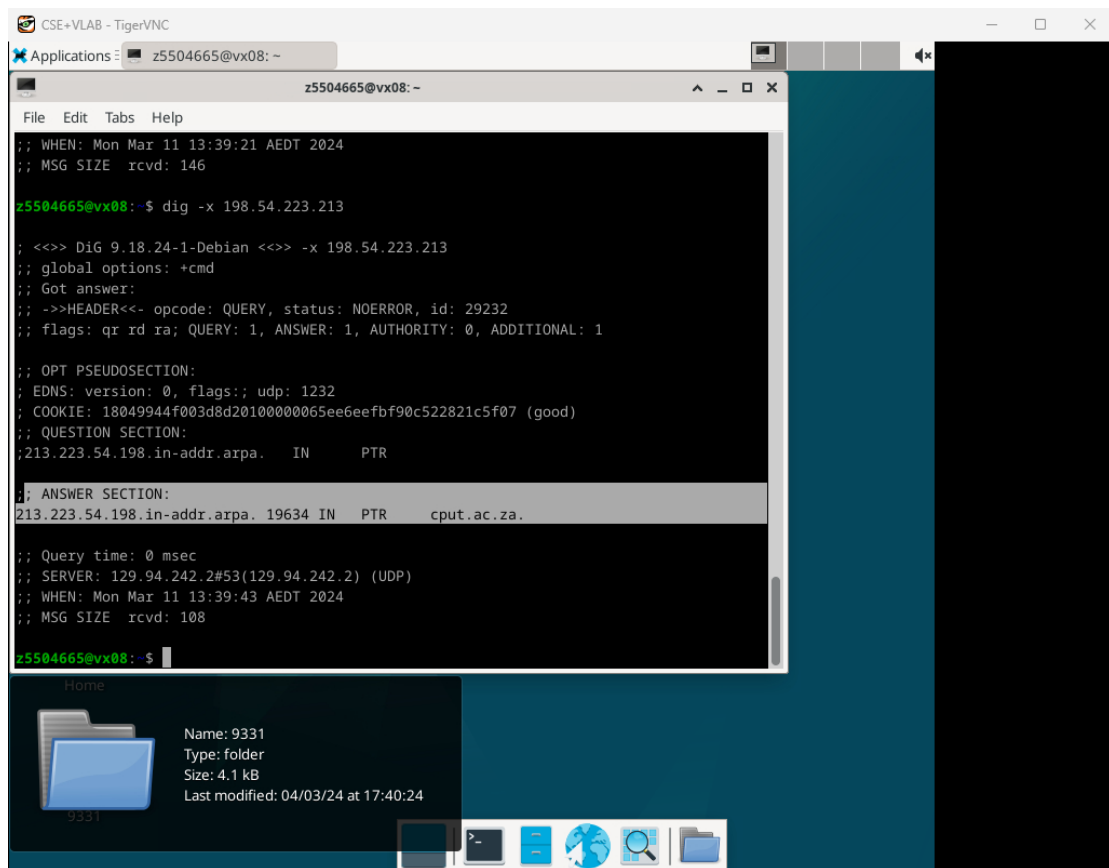
Q5

The type of query should be NS



And IP addresses of these nameservers are marked in the picture.

Q6



The screenshot shows a terminal window titled "z5504665@vx08: ~" with a menu bar (File, Edit, Tabs, Help). The terminal output shows a DNS query for the IP address 198.54.223.213 using the command `dig -x 198.54.223.213`. The output includes the following details:

```
;; WHEN: Mon Mar 11 13:39:21 AEDT 2024
;; MSG SIZE rcvd: 146

z5504665@vx08:~$ dig -x 198.54.223.213

;<<>> DiG 9.18.24-1-Debian <<>> -x 198.54.223.213
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 29232
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 18049944f003d8d2010000065ee6eefbf90c522821c5f07 (good)
;; QUESTION SECTION:
;213.223.54.198.in-addr.arpa. IN PTR

;; ANSWER SECTION:
213.223.54.198.in-addr.arpa. 19634 IN PTR cput.ac.za.

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)
;; WHEN: Mon Mar 11 13:39:43 AEDT 2024
;; MSG SIZE rcvd: 108

z5504665@vx08:~$
```

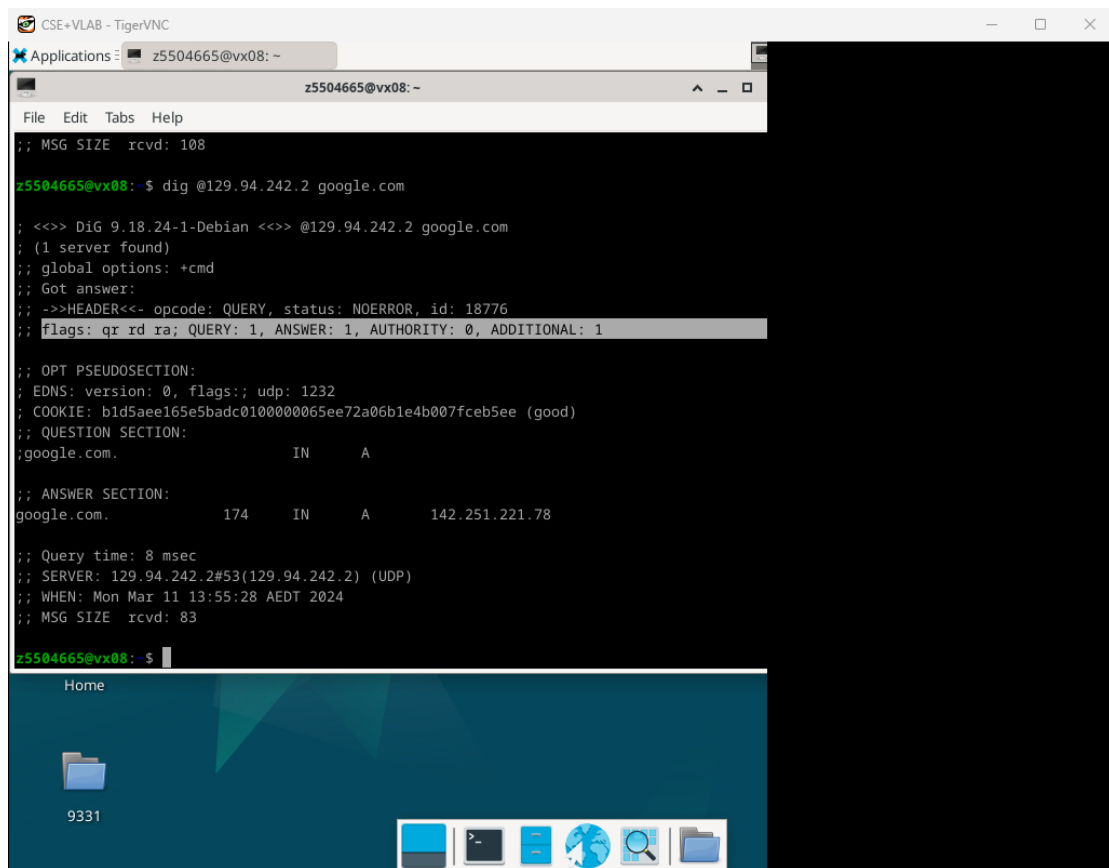
Below the terminal window, a file manager shows a folder named "9331" with the following details:

- Name: 9331
- Type: folder
- Size: 4.1 kB
- Last modified: 04/03/24 at 17:40:24

The desktop environment includes a taskbar with icons for a terminal, file manager, and other applications.

the DNS name associated with the IP address 198.54.223.213 is **cput.ac.za**, and the type of query is **-x**.

Q7



The screenshot shows a TigerVNC window titled "CSE+VLAB - TigerVNC". Inside the window, there is a terminal window titled "z5504665@vx08: ~" and a desktop environment. The terminal window displays the output of a `dig` command executed at 129.94.242.2 for google.com. The output shows a successful query with a response from 142.251.221.78. The desktop environment has a teal background, a "Home" button, a folder icon, and a taskbar with several application icons.

```
z5504665@vx08: ~  
File Edit Tabs Help  
;; MSG SIZE rcvd: 108  
  
z5504665@vx08: ~$ dig @129.94.242.2 google.com  
  
;; <<>> DiG 9.18.24-1-Debian <<>> @129.94.242.2 google.com  
;; (1 server found)  
;; global options: +cmd  
;; Got answer:  
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 18776  
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
;; EDNS: version: 0, flags:; udp: 1232  
;; COOKIE: b1d5aee165e5badc0100000065ee72a06b1e4b007fceb5ee (good)  
;; QUESTION SECTION:  
;; google.com. IN A  
  
;; ANSWER SECTION:  
google.com. 174 IN A 142.251.221.78  
  
;; Query time: 8 msec  
;; SERVER: 129.94.242.2#53(129.94.242.2) (UDP)  
;; WHEN: Mon Mar 11 13:55:28 AEDT 2024  
;; MSG SIZE rcvd: 83  
  
z5504665@vx08: ~$
```

No, I did not. Because the flags line isn't contain the "aa" tag.

Q8

```
CSE+VLAB - TigerVNC
Applications: z5504665@vx08: ~
z5504665@vx08: ~
File Edit Tabs Help
;; MSG SIZE rcvd: 108
z5504665@vx08: ~$ dig @208.94.148.13 google.com

; <<>> DiG 9.18.24-1-Debian <<>> @208.94.148.13 google.com
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: REFUSED, id: 38529
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1280
;; QUESTION SECTION:
;google.com.                IN      A

;; Query time: 0 msec
;; SERVER: 208.94.148.13#53(208.94.148.13) (UDP)
;; WHEN: Mon Mar 11 14:01:52 AEDT 2024
;; MSG SIZE rcvd: 39

z5504665@vx08: ~$ dig @2.16.130.66 google.com

; <<>> DiG 9.18.24-1-Debian <<>> @2.16.130.66 google.com
; (1 server found)
```

```
CSE+VLAB - TigerVNC
Applications: z5504665@vx08: ~
z5504665@vx08: ~
File Edit Tabs Help
z5504665@vx08: ~$ dig @2.16.130.66 google.com

; <<>> DiG 9.18.24-1-Debian <<>> @2.16.130.66 google.com
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 11727
;; flags: qr aa rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;google.com.                IN      A

;; AUTHORITY SECTION:
google.com.                7200    IN      SOA      a18-66.akam.net. hostmaster.akamai.com.
1473132463 43200 7200 604800 7200

;; Query time: 12 msec
;; SERVER: 2.16.130.66#53(2.16.130.66) (UDP)
;; WHEN: Mon Mar 11 14:02:13 AEDT 2024
;; MSG SIZE rcvd: 108

z5504665@vx08: ~$
```

I tried it twice by using two different ip address that I got in Q5, and by using 208.94.148.13 I got no Authority answer, but I got Authority answer by using 2.16.130.66.

Q9

```
z5504665@vx08:~$ dig google.com NS

;<<>> DiG 9.18.24-1-Debian <<>> google.com NS
;; global options: +cmd
;; Got answer:
;; ->HEADER<<- opcode: QUERY, status: NOERROR, id: 46772
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 9

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:;, udp: 1232
; COOKIE: c84a7c0ba404ec870100000065ee7750d3a76f0acdd9eb25 (good)
;; QUESTION SECTION:
;google.com.                IN      NS

;; ANSWER SECTION:
google.com.                 14794   IN      NS      ns4.google.com.
google.com.                 14794   IN      NS      ns2.google.com.
google.com.                 14794   IN      NS      ns1.google.com.
google.com.                 14794   IN      NS      ns3.google.com.

;; ADDITIONAL SECTION:
ns1.google.com.            334886 IN      A       216.239.32.10
ns2.google.com.            236225 IN      A       216.239.34.10
ns3.google.com.            336054 IN      A       216.239.36.10
ns4.google.com.            64300  IN      A       216.239.38.10
ns1.google.com.            334866 IN      AAAA    2001:4860:4802:32::a

Home
9331
```

```
z5504665@vx08:~$ dig google.com MX

;<<>>HEADER<<- opcode: QUERY, status: NOERROR, id: 25553
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 10
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:;, udp: 512
;; QUESTION SECTION:
;google.com.                IN      MX

;; ANSWER SECTION:
google.com.                 300     IN      MX      10 smtp.google.com.

;; ADDITIONAL SECTION:
smtp.google.com.            300     IN      A       142.251.12.26
smtp.google.com.            300     IN      A       142.251.12.27
smtp.google.com.            300     IN      A       172.217.194.26
smtp.google.com.            300     IN      A       172.217.194.27
smtp.google.com.            300     IN      A       142.250.4.27
smtp.google.com.            300     IN      AAAA    2404:6800:4003:c11::1a
smtp.google.com.            300     IN      AAAA    2404:6800:4003:c11::1b
smtp.google.com.            300     IN      AAAA    2404:6800:4003:c04::1b
smtp.google.com.            300     IN      AAAA    2404:6800:4003:c04::1a

;; Query time: 96 msec
;; SERVER: 216.239.32.10#53(216.239.32.10) (UDP)
;; WHEN: Mon Mar 11 14:16:24 AEDT 2024

Home
9331
```

The answer is **google.com. 300 IN MX 10 smtp.google.com.** And the type of query is **MX**.

Q10

5 times

The screenshot shows a terminal window titled "z5504665@vx08: ~" with a menu bar (File, Edit, Tabs, Help). The terminal output is as follows:

```
z5504665@vx08:~$ dig . NS

;<<>> DiG 9.18.24-1-Debian <<>> . NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 30518
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 13, AUTHORITY: 0, ADDITIONAL: 27

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: ee7bb61df83dbc810100000065ee7e6bc5b1efead38a427 (good)
;; QUESTION SECTION:
; .                IN      NS

;; ANSWER SECTION:
160667 IN      NS      b.root-servers.net.
160667 IN      NS      m.root-servers.net.
160667 IN      NS      h.root-servers.net.
160667 IN      NS      i.root-servers.net.
160667 IN      NS      a.root-servers.net.
160667 IN      NS      d.root-servers.net.
160667 IN      NS      e.root-servers.net.
160667 IN      NS      g.root-servers.net.
160667 IN      NS      f.root-servers.net.
160667 IN      NS      c.root-servers.net.
160667 IN      NS      j.root-servers.net.
```

The screenshot shows a terminal window titled "z5504665@vx08: ~" with a menu bar (File, Edit, Tabs, Help). The terminal output is as follows:

```
z5504665@vx08:~$ dig @198.41.0.4 au NS

;<<>> DiG 9.18.24-1-Debian <<>> @198.41.0.4 au NS
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 19930
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 4, ADDITIONAL: 9
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
; au.              IN      NS

;; AUTHORITY SECTION:
au.                172800 IN      NS      q.au.
au.                172800 IN      NS      t.au.
au.                172800 IN      NS      s.au.
au.                172800 IN      NS      r.au.

;; ADDITIONAL SECTION:
q.au.              172800 IN      A       65.22.196.1
q.au.              172800 IN      AAAA    2a01:8840:be::1
t.au.              172800 IN      A       65.22.199.1
t.au.              172800 IN      AAAA    2a01:8840:be::1
```

```
CSE+VLAB - TigerVNC
Applications: z5504665@vx08: ~
z5504665@vx08: ~
File Edit Tabs Help
z5504665@vx08:~$ ^C
z5504665@vx08:~$ dig @65.22.196.1 edu.au NS

; <<>> DiG 9.18.24-1-Debian <<>> @65.22.196.1 edu.au NS
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 30536
;; flags: qr aa rd; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; QUESTION SECTION:
;edu.au.                                IN      NS

;; ANSWER SECTION:
edu.au.      900    IN      NS      r.au.
edu.au.      900    IN      NS      t.au.
edu.au.      900    IN      NS      s.au.
edu.au.      900    IN      NS      a.au.
edu.au.      900    IN      NS      q.au.

;; Query time: 24 msec
;; SERVER: 65.22.196.1#53(65.22.196.1) (UDP)
;; WHEN: Mon Mar 11 14:46:55 AEDT 2024
```

```
CSE+VLAB - TigerVNC
Applications: z5504665@vx08: ~
z5504665@vx08: ~
File Edit Tabs Help
z5504665@vx08:~$ dig @65.22.196.1 unsw.edu.au NS

; <<>> DiG 9.18.24-1-Debian <<>> @65.22.196.1 unsw.edu.au NS
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 52512
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 3, ADDITIONAL: 6
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 1232
;; QUESTION SECTION:
;unsw.edu.au.                IN      NS

;; AUTHORITY SECTION:
unsw.edu.au.      900    IN      NS      ns3.unsw.edu.au.
unsw.edu.au.      900    IN      NS      ns1.unsw.edu.au.
unsw.edu.au.      900    IN      NS      ns2.unsw.edu.au.

;; ADDITIONAL SECTION:
ns1.unsw.edu.au.  900    IN      A       129.94.0.192
ns2.unsw.edu.au.  900    IN      A       129.94.0.193
ns3.unsw.edu.au.  900    IN      A       192.155.82.178
ns1.unsw.edu.au.  900    IN      AAAA    2001:388:c:35::1
ns2.unsw.edu.au.  900    IN      AAAA    2001:388:c:35::1
```

```
CSE+VLAB - TigerVNC
Applications: z5504665@vx08: ~
z5504665@vx08: ~
File Edit Tabs Help
;; MSG SIZE rcvd: 198
z5504665@vx08:~$ dig @129.94.0.192 lyre00.cse.unsw.edu.au NS
; <<>> DiG 9.18.24-1-Debian <<>> @129.94.0.192 lyre00.cse.unsw.edu.au NS
; (1 server found)
; global options: +cmd
; Got answer:
; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 46876
; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 2, ADDITIONAL: 5
; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
lyre00.cse.unsw.edu.au.      IN      NS

;; AUTHORITY SECTION:
cse.unsw.edu.au.           300     IN      NS      beethoven.orchestra.cse.unsw.edu.au.
cse.unsw.edu.au.           300     IN      NS      maestro.orchestra.cse.unsw.edu.au.

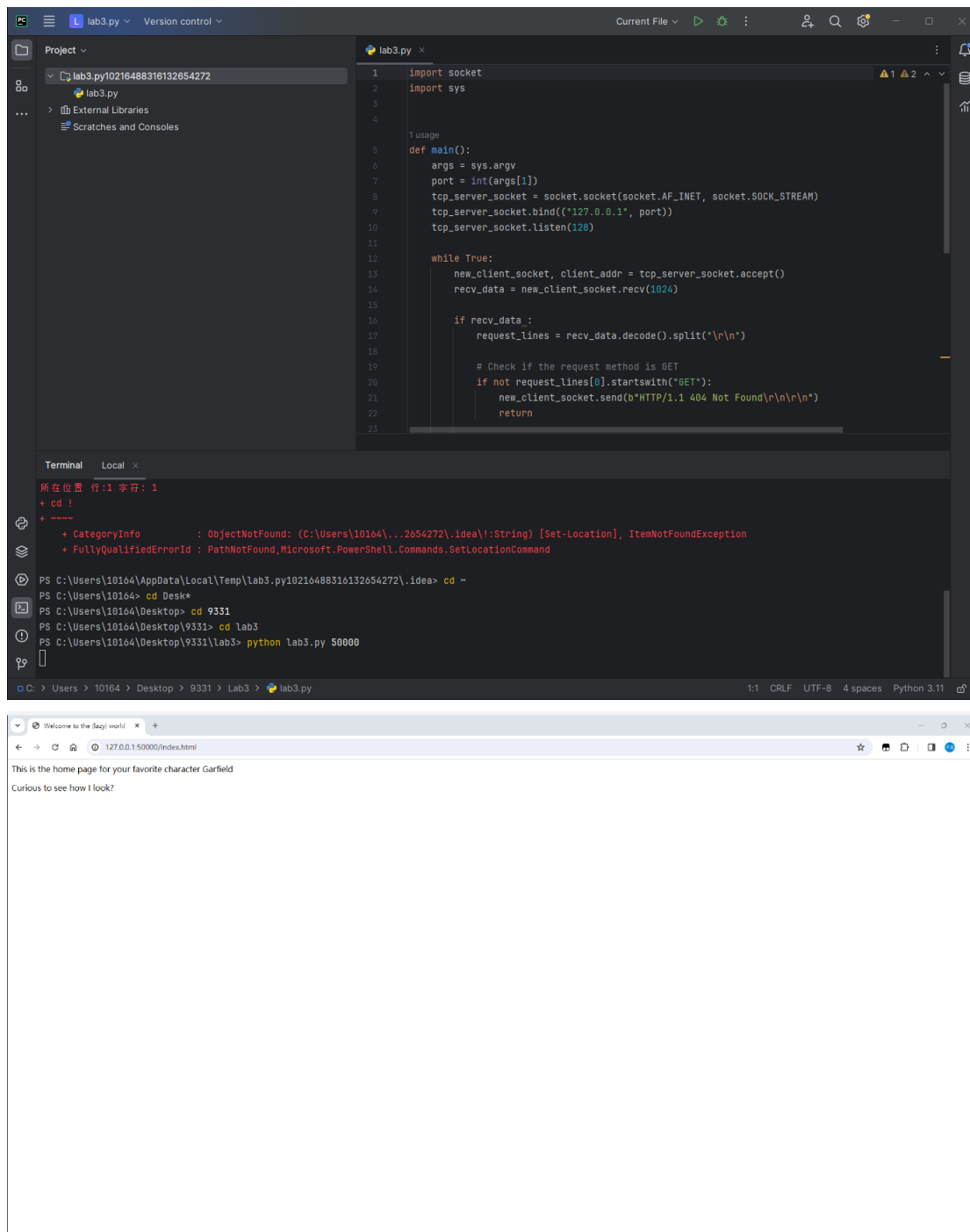
;; ADDITIONAL SECTION:
beethoven.orchestra.cse.unsw.edu.au. 300 IN A 129.94.172.11
beethoven.orchestra.cse.unsw.edu.au. 300 IN A 129.94.208.3
beethoven.orchestra.cse.unsw.edu.au. 300 IN A 129.94.242.2
maestro.orchestra.cse.unsw.edu.au. 300 IN A 129.94.242.2
```

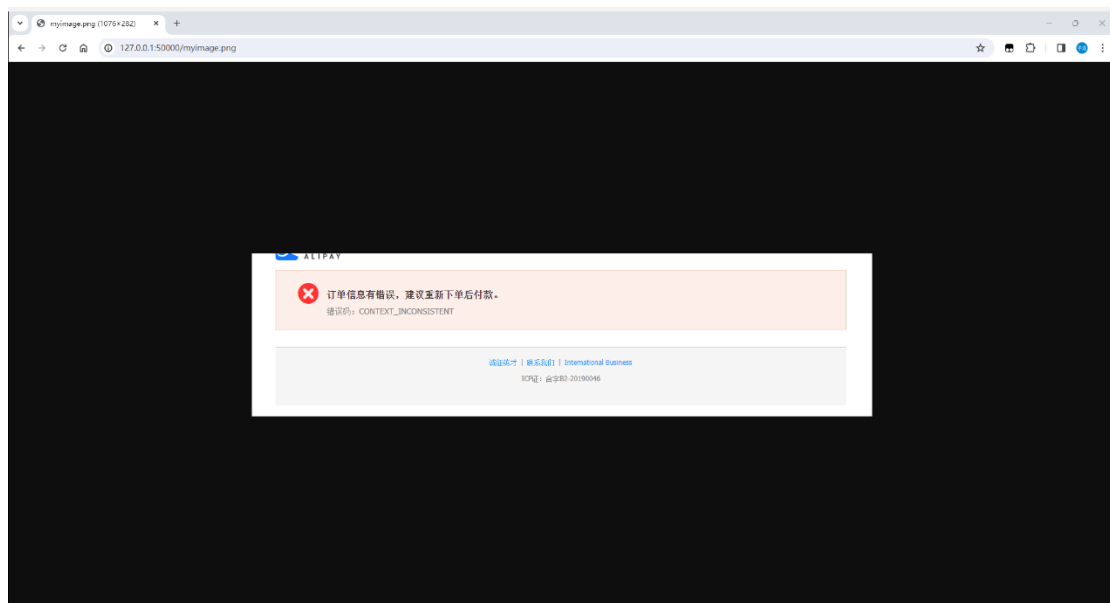
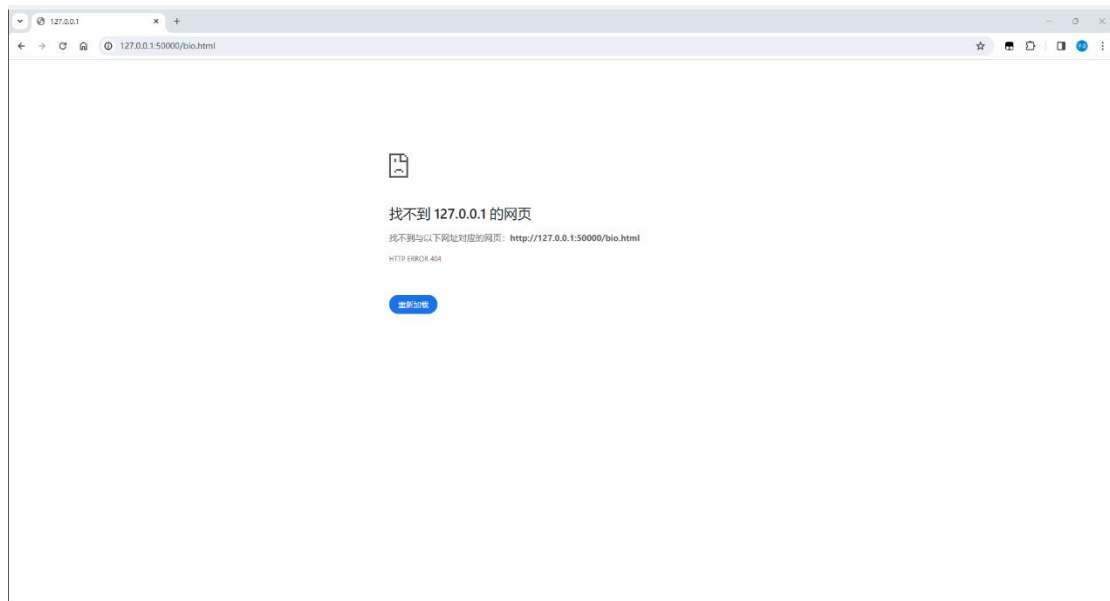
Q11

Yes, one physical machine can indeed have several names and/or IP addresses associated with it. This is a common practice in networking and can serve various purposes, such as load balancing, virtual hosting, and network segmentation.

Exercise 4

Test:





Code:

```
import socket
import sys

def main():
    args = sys.argv
    port = int(args[1])
    tcp_server_socket = socket.socket(socket.AF_INET,
socket.SOCK_STREAM)
    tcp_server_socket.bind(("127.0.0.1", port))
    tcp_server_socket.listen(128)
```

```

while True:
    new_client_socket, client_addr = tcp_server_socket.accept()
    recv_data = new_client_socket.recv(1024)

    if recv_data :
        request_lines = recv_data.decode().split("\r\n")

        # Check if the request method is GET
        if not request_lines[0].startswith("GET"):
            new_client_socket.send(b"HTTP/1.1 404 Not
Found\r\n\r\n")
            return

        # Parse the requested file path
        requested_file_path = request_lines[0].split()[1]

        # Serve the requested file if it exists, else return 404
        try:
            with open("." + requested_file_path, "rb") as file:
                file_content = file.read()
                response_headers = "HTTP/1.1 200 OK\r\nContent-
Length: {} \r\n\r\n".format(len(file_content))
                new_client_socket.send(response_headers.encode() +
file_content)
            except FileNotFoundError:
                new_client_socket.send(b"HTTP/1.1 404 Not
Found\r\n\r\n")

        new_client_socket.close()

    tcp_server_socket.close()

if __name__ == "__main__":
    main()

```