

Exercise 3:

1) IP: 23.185.0.1 Type: A

```
nslookup www.eecs.berkeley.edu
; <<> Dig 9.9.9-9deb019-bbian <<> www.eecs.berkeley.edu
; global options: <cmd>
; Got answer:
;-->HEADER<<- opcode: QUERY, status: NOERROR, id: 5205
; flags: qr rd ra QUERY: 1, ANSWER: 3, AUTHORITY: 4, ADDITIONAL: 7
; OPT PSEUDOSECTION:
; EDNS: version 0, flags: udp: 4096
; QUESTION SECTION:
; www.eecs.berkeley.edu.      IN      A
; ANSWER SECTION:
; www.eecs.berkeley.edu.      64726   IN      CNAME   live-eecs.pantheonsite.io.
; live-eecs.pantheonsite.io.   315     IN      CNAME   rel-edge.pantheon.io.
; rel-edge.pantheon.io.       15      IN      A        23.185.0.1
; AUTHORITY SECTION:
; edge.pantheon.io.           15      IN      NS       ns-2013.awsdns-03.co.uk.
; edge.pantheon.io.           15      IN      NS       ns-2013.awsdns-25.com.
; edge.pantheon.io.           15      IN      NS       ns-644.awsdns-15.net.
; edge.pantheon.io.           15      IN      NS       ns-1213.awsdns-23.org.
; ADDITIONAL SECTION:
; ns-233.awsdns-23.com.      12908   IN      A        205.251.192.233
; ns-644.awsdns-16.net.      78584   IN      A        205.251.194.132
; ns-644.awsdns-16.net.      78584   IN      AAAA     2600:9000:5302:8400::1
; ns-1213.awsdns-23.org.     76460   IN      A        205.251.196.189
; ns-1213.awsdns-23.org.     57031   IN      AAAA     2600:9000:5304:bd00::1
; ns-2013.awsdns-59.co.uk.   108812  IN      A        205.251.199.221
; Query time: 0 msec
; SERVER: 129.94.242.2#53(129.94.242.2)
; WHEN: Sun Mar 13 17:36:46 EDT 2022
; MSG SIZE rcvd: 397
```

2) canonical name: live-eecs.pantheonsite.io.

Reason: much easier to remember for user

3) To provide information and IP address of name servers

4) 129.94.242.2

5) adns2.berkeley.edu 128.32.136.14

adns1.berkeley.edu 128.32.136.3

adns3.berkeley.edu 192.107.102.142

ns.eecs.berkeley.edu 129.229.60.153

ns.cs.berkeley.edu 129.229.60.61

NS

```
nslookup ns.eecs.berkeley.edu NS
; <<> Dig 9.9.9-9deb019-bbian <<> ns.eecs.berkeley.edu NS
; global options: <cmd>
; Got answer:
;-->HEADER<<- opcode: QUERY, status: NOERROR, id: 2785
; flags: qr rd ra QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 10
; OPT PSEUDOSECTION:
; EDNS: version 0, flags: udp: 4096
; QUESTION SECTION:
; ns.eecs.berkeley.edu.      IN      NS
; ANSWER SECTION:
; ns.eecs.berkeley.edu.      2329    IN      NS       adns2.berkeley.edu.
; ns.eecs.berkeley.edu.      2329    IN      NS       ns.cs.berkeley.edu.
; ns.eecs.berkeley.edu.      2329    IN      NS       adns3.berkeley.edu.
; ns.eecs.berkeley.edu.      2329    IN      NS       adns1.berkeley.edu.
; ns.eecs.berkeley.edu.      2329    IN      NS       ns.eecs.berkeley.edu.
; ADDITIONAL SECTION:
; ns13.berkeley.edu.        5065    IN      A        193.229.60.61
; ns13.berkeley.edu.        65900   IN      AAAA     2607:f40c:d120c::30
; ns.eecs.berkeley.edu.      9055    IN      A        193.229.60.153
; adns1.berkeley.edu.       5481    IN      A        128.32.136.3
; adns1.berkeley.edu.       5481    IN      AAAA     2607:f40c:ffff:ffff::3
; adns2.berkeley.edu.       10190   IN      A        128.32.136.14
; adns2.berkeley.edu.       5481    IN      AAAA     2607:f40c:ffff:ffff::e
; adns3.berkeley.edu.       1531    IN      A        192.107.102.142
; adns3.berkeley.edu.       10190   IN      AAAA     2607:f40c:600c:d1bc
; Query time: 0 msec
; SERVER: 129.94.242.2#53(129.94.242.2)
; WHEN: Sun Mar 13 17:46:20 EDT 2022
; MSG SIZE rcvd: 855
```

6) SOA

```
nslookup 111.68.101.54
; <<> Dig 9.9.9-9deb019-bbian <<> 111.68.101.54
; global options: <cmd>
; Got answer:
;-->HEADER<<- opcode: QUERY, status: NOERROR, id: 11508
; flags: qr rd ra QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
; OPT PSEUDOSECTION:
; EDNS: version 0, flags: udp: 4096
; QUESTION SECTION:
; 111.68.101.54.             IN      A
; AUTHORITY SECTION:
; grns.com.                  2148    IN      SOA       a.root-servers.net. nstld.veris
; grns.com.                  2022031201 1800 900 604800 86400
; Query time: 0 msec
; SERVER: 129.94.242.2#53(129.94.242.2)
; WHEN: Sun Mar 13 18:02:48 EDT 2022
; MSG SIZE rcvd: 117
```

7) No.Because "AA" is not in flags.

```
nslookup 129.94.242.33 yahoo.com MX
; <<> Dig 9.9.9-9deb019-bbian <<> 129.94.242.33 yahoo.com MX
; (1 server found)
; global options: <cmd>
; Got answer:
;-->HEADER<<- opcode: QUERY, status: NOERROR, id: 3377
; flags: qr rd ra QUERY: 1, ANSWER: 3, AUTHORITY: 5, ADDITIONAL: 10
; OPT PSEUDOSECTION:
; EDNS: version 0, flags: udp: 4096
; QUESTION SECTION:
; yahoo.com.                 IN      MX
; ANSWER SECTION:
; yahoo.com.                 288     IN      MX       1 mx1.yahoo.com.
; yahoo.com.                 288     IN      MX       1 mx2.yahoo.com.
; yahoo.com.                 288     IN      MX       1 mx3.yahoo.com.
; AUTHORITY SECTION:
; yahoo.com.                 60544   IN      NS       ns1.yahoo.com.
; yahoo.com.                 60544   IN      NS       ns2.yahoo.com.
; yahoo.com.                 60544   IN      NS       ns3.yahoo.com.
; yahoo.com.                 60544   IN      NS       ns4.yahoo.com.
; yahoo.com.                 60544   IN      NS       ns5.yahoo.com.
; ADDITIONAL SECTION:
; ns1.yahoo.com.             74055   IN      A        68.180.131.15
; ns1.yahoo.com.             32364   IN      AAAA     2001:4980:1b01:7961:886f:f921
; ns2.yahoo.com.             161279  IN      A        68.142.255.15
; ns2.yahoo.com.             14037   IN      AAAA     2001:4980:1b01:7961:886f:f921
; ns3.yahoo.com.             1827    IN      A        27.123.42.42
; ns3.yahoo.com.             360     IN      AAAA     2001:4980:1b01:7961:886f:f921
; ns4.yahoo.com.             65332   IN      A        88.138.11.157
; ns4.yahoo.com.             9619    IN      A        202.160.37.53
; ns5.yahoo.com.             9020    IN      AAAA     2001:4980:1b01:7961:886f:f921
; Query time: 0 msec
; SERVER: 129.94.242.2#53(129.94.242.2)
; WHEN: Sun Mar 13 18:01:49 EDT 2022
; MSG SIZE rcvd: 399
```

8)Query refused

```
z5379852@vx3:/tmp_amd/reed/export/reed/4/z5379852/Desktop$ dig @adns2.berkeley.edu yahoo.com

; <<> DiG 9.9.5-9+deb8u19-Debian <<> @adns2.berkeley.edu yahoo.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: REFUSED, id: 42455
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags: udp: 1220
;; QUESTION SECTION:
;yahoo.com.                IN      A

;; Query time: 168 msec
;; SERVER: 128.32.136.14#53(128.32.136.14)
;; WHEN: Sun Mar 13 18:04:20 AEDT 2022
;; MSG SIZE rcvd: 38
```

9) "A" and "MX"

```
z5379852@vx3:/tmp_amd/reed/export/reed/4/z5379852/Desktop$ dig yahoo.com

; <<> DiG 9.9.5-9+deb8u19-Debian <<> yahoo.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 39131
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 5, ADDITIONAL: 10

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

;; ANSWER SECTION:
yahoo.com.                982     IN      A      98.137.11.164
yahoo.com.                982     IN      A      74.6.143.26
yahoo.com.                982     IN      A      74.6.231.21
yahoo.com.                982     IN      A      74.6.143.25
yahoo.com.                982     IN      A      74.6.143.20
yahoo.com.                982     IN      A      98.137.11.163

;; AUTHORITY SECTION:
yahoo.com.                60022   IN      NS      ns1.yahoo.com.
yahoo.com.                60022   IN      NS      ns3.yahoo.com.
yahoo.com.                60022   IN      NS      ns5.yahoo.com.
yahoo.com.                60022   IN      NS      ns2.yahoo.com.
yahoo.com.                60022   IN      NS      ns4.yahoo.com.

;; ADDITIONAL SECTION:
ns1.yahoo.com.            73533   IN      A      68.180.131.16
ns1.yahoo.com.            31002   IN      AAAA    2001:4998:1b0::7961:686f:6f21
ns2.yahoo.com.            160717  IN      A      68.142.255.16
ns2.yahoo.com.            10375   IN      AAAA    2001:4998:1c0::7961:686f:6f21
ns3.yahoo.com.            1105    IN      A      27.123.42.42
ns3.yahoo.com.            1208    IN      AAAA    2406:8600:f03f:1f8::1003
ns4.yahoo.com.            64810   IN      A      98.138.11.157
ns5.yahoo.com.            4497    IN      A      202.165.97.53
ns5.yahoo.com.            41825   IN      AAAA    2406:2000:1d0::7961:686f:6f21

;; Query time: 0 msec
;; SERVER: 129.94.242.45#53(129.94.242.45)
;; WHEN: Sun Mar 13 18:10:22 AEDT 2022
;; MSG SIZE rcvd: 416

z5379852@vx3:/tmp_amd/reed/export/reed/4/z5379852/Desktop$ dig @68.180.131.16 yahoo.com MX

; <<> DiG 9.9.5-9+deb8u19-Debian <<> @68.180.131.16 yahoo.com MX
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 52592
;; flags: qr aa rd; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags: udp: 1272
;; QUESTION SECTION:
;yahoo.com.                IN      MX

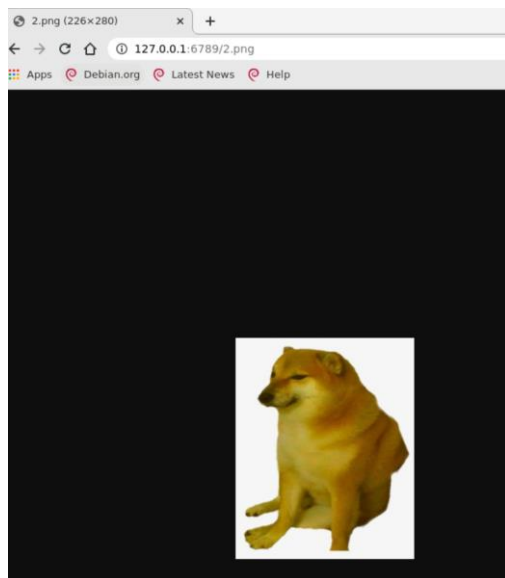
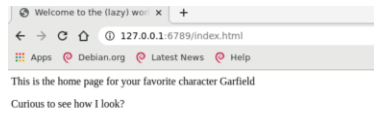
;; ANSWER SECTION:
yahoo.com.                1800    IN      MX      1 mta6.am0.yahoodns.net.
yahoo.com.                1800    IN      MX      1 mta7.am0.yahoodns.net.
yahoo.com.                1800    IN      MX      1 mta5.am0.yahoodns.net.

;; Query time: 141 msec
;; SERVER: 68.180.131.16#53(68.180.131.16)
;; WHEN: Sun Mar 13 18:10:55 AEDT 2022
;; MSG SIZE rcvd: 117
```

10)5

11)Yes.

Exercise 4:



```
z5379852@vx7:/tmp_amd/reed/export/reed/4/z5379852/Desktop$ python3 WebServer.py
port:6789
The server is available now.
Connection Success.
Connection Success.
Connection Success.
No Such File.
```

