

Exercise 3:

1. 23.185.0.1,A

```
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags: udp: 4096
;; QUESTION SECTION:
;www.eecs.berkeley.edu.      IN      A

;; ANSWER SECTION:
www.eecs.berkeley.edu. 10861 IN      CNAME   live-eecs.pantheonsite.io.
live-eecs.pantheonsite.io. 117 IN      CNAME   fe1.edge.pantheon.io.
fe1.edge.pantheon.io. 126 IN      A      23.185.0.1

;; AUTHORITY SECTION:
edge.pantheon.io.      91      IN      NS       ns-644.awsdns-16.net.
edge.pantheon.io.      91      IN      NS       ns-2013.awsdns-59.co.uk.
edge.pantheon.io.      91      IN      NS       ns-233.awsdns-29.com.
edge.pantheon.io.      91      IN      NS       ns-1213.awsdns-23.org.

;; ADDITIONAL SECTION:
ns-233.awsdns-29.com. 52640 IN      A      205.251.192.233
ns-233.awsdns-29.com. 52640 IN      AAAA   2600:9000:5300:e900::1
ns-644.awsdns-16.net. 52199 IN      A      205.251.194.132
```

2. live-eecs.pantheonsite.io. After transferred the CNAME of domain name to the new address, the complexity of authoritative DNS configuration is reduced, the frequently changing configuration, function and business are cut and separated, and the troubleshooting is simple and clear

3. AUTHORITY SECTION got four records in type Ns and all of them from edge.pantheon.io.

ADDITIONAL SECTION has two types of server with is A and AAAA

4.

```
;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2)
;; WHEN: Sun Jun 28 21:01:59 AEST 2020
;; MSG SIZE rcvd: 172
```

So local is 129.94.242.2

5.

Nameserver:

ADNS3.BERKELEY.EDU IP: 192.107.102.142

ADNS2.BERKELEY.EDU IP: 128.32.136.14

ADNS1.BERKELEY.EDU IP: 128.32.136.3

NS

6. webserver.seecs.nust.edu.pk, PTR

```
68.101.54
; <<> DiG 9.9.5-9+deb8u19-Debian <<> -x 111.68.101.54
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 41216
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;54.101.68.111.in-addr.arpa.      IN      PTR

;; ANSWER SECTION:
54.101.68.111.in-addr.arpa. 538 IN      PTR      webserver.seecs.nust.edu.pk.
```

7. NO it's not, because there isn't aa (qr rd ra) in flags

```
; <<> DiG 9.9.5-9+deb8u19-Debian <<> @129.94.242.33 yahoo.com
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 37163
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 5, ADDITIONAL: 8

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

;; ANSWER SECTION:
```

8. I used 192.107.102.142 and there isn't any answer,

```
z5211414@vx2:/tmp_amd/reed/export/reed/1/z5211414/Desktop/Comp3331$ dig @192.107.102.142 yahoo.com

; <<> DiG 9.9.5-9+deb8u19-Debian <<> @192.107.102.142 yahoo.com
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: REFUSED, id: 25829
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

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

;; Query time: 167 msec
;; SERVER: 192.107.102.142#53(192.107.102.142)
;; WHEN: Sun Jun 28 21:13:12 AEST 2020
;; MSG SIZE rcvd: 38

z5211414@vx2:/tmp_amd/reed/export/reed/1/z5211414/Desktop/Comp3331$
```

9. Mx and NS

10. Six times, first run dig . NS

```

.                167760 IN      NS      h.root-servers.net.

;; ADDITIONAL SECTION:
a.root-servers.net. 162090 IN      A       198.41.0.4
a.root-servers.net. 23018  IN      AAAA    2001:503:ba3e::2:30
b.root-servers.net. 12049  IN      A       199.9.14.201
b.root-servers.net. 158126 IN      AAAA    2001:500:200::b
c.root-servers.net. 313296 IN      A       192.33.4.12
c.root-servers.net. 97622  IN      AAAA    2001:500:2::c
d.root-servers.net. 580124 IN      A       199.7.91.13
d.root-servers.net. 97622  IN      AAAA    2001:500:2d::d
e.root-servers.net. 11961  IN      A       192.203.230.10
e.root-servers.net. 97622  IN      AAAA    2001:500:a8::e
f.root-servers.net. 443223 IN      A       192.5.5.241
f.root-servers.net. 107294 IN      AAAA    2001:500:2f::f
g.root-servers.net. 11961  IN      A       192.112.36.4
g.root-servers.net. 97622  IN      AAAA    2001:500:12::d0d
h.root-servers.net. 453439 IN      A       198.97.190.53
h.root-servers.net. 97622  IN      AAAA    2001:500:1::53
i.root-servers.net. 329045 IN      A       192.36.148.17
i.root-servers.net. 107294 IN      AAAA    2001:7fe::53
j.root-servers.net. 11961  IN      A       192.58.128.30
j.root-servers.net. 261523 IN      AAAA    2001:503:c27::2:30
k.root-servers.net. 313296 IN      A       193.0.14.129
k.root-servers.net. 195024 IN      AAAA    2001:7fd::1
l.root-servers.net. 11961  IN      A       199.7.83.42
l.root-servers.net. 159181 IN      AAAA    2001:500:9f::42
m.root-servers.net. 11961  IN      A       202.12.27.33
m.root-servers.net. 244716 IN      AAAA    2001:dc3::35

```

Now I choose one of the server.

Run dig @a.root-servers.net au. NS and I got

```

;; ADDITIONAL SECTION:
m.au.                172800 IN      A       156.154.100.24
m.au.                172800 IN      AAAA    2001:502:2eda::24
d.au.                172800 IN      A       162.159.25.38
d.au.                172800 IN      AAAA    2400:cb00:2049:1::a29f:1926
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:c1::1
s.au.                172800 IN      A       65.22.198.1
s.au.                172800 IN      AAAA    2a01:8840:c0::1
r.au.                172800 IN      A       65.22.197.1
r.au.                172800 IN      AAAA    2a01:8840:bf::1
n.au.                172800 IN      A       156.154.101.24
n.au.                172800 IN      AAAA    2001:502:ad09::24
a.au.                172800 IN      A       58.65.254.73
a.au.                172800 IN      AAAA    2407:6e00:254:306::73
c.au.                172800 IN      A       162.159.24.179
c.au.                172800 IN      AAAA    2400:cb00:2049:1::a29f:18b3

```

And keep choose one and run dig @c.au. edu.au. NS

```
;; ADDITIONAL SECTION:
q.au.      86400  IN      A       65.22.196.1
r.au.      86400  IN      A       65.22.197.1
s.au.      86400  IN      A       65.22.198.1
t.au.      86400  IN      A       65.22.199.1
q.au.      86400  IN      AAAA    2a01:8840:be::1
r.au.      86400  IN      AAAA    2a01:8840:bf::1
s.au.      86400  IN      AAAA    2a01:8840:c0::1
t.au.      86400  IN      AAAA    2a01:8840:c1::1
```

And keep run dig @t.au. unsw.edu.au. NS

```
;; ADDITIONAL SECTION:
ns3.unsw.edu.au. 900  IN      A       192.155.82.178
ns2.unsw.edu.au. 900  IN      A       129.94.0.193
ns1.unsw.edu.au. 900  IN      A       129.94.0.192
ns2.unsw.edu.au. 900  IN      AAAA    2001:388:c:35::2
ns1.unsw.edu.au. 900  IN      AAAA    2001:388:c:35::1
```

And run dig @ ns1.unsw.edu.au cse.unsw.edu.au. NS

```
;cse.unsw.edu.au.      IN      NS
;; AUTHORITY SECTION:
cse.unsw.edu.au.      10800  IN      NS      maestro.orchestra.cse.unsw.edu.au.
cse.unsw.edu.au.      10800  IN      NS      beethoven.orchestra.cse.unsw.edu.au.
```

And run dig @maestro.orchestra.cse.unsw.edu.au. localhost

Will get the IP address of mine machine

11.Sure, Because the domain name binding, not only have the IP, but also the site files on the host directory to find a specific site, so can have more than one domain name

Exercise 4

1.