

## ECS 152A Programming 2 Part C

a.

First command:

```
dig +norecurse @a.root-servers.net any cs.ucdavis.edu
```

First response :

```
; <<>> DiG 9.11.3-lubuntu1.14-Ubuntu <<>> +norecurse @a.root-servers.net any
cs.ucdavis.edu
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 48607
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 13, ADDITIONAL: 27

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 4096
;; QUESTION SECTION:
;cs.ucdavis.edu.                IN  ANY

;; AUTHORITY SECTION:
edu.                172800  IN  NS  b.edu-servers.net.
edu.                172800  IN  NS  f.edu-servers.net.
edu.                172800  IN  NS  i.edu-servers.net.
edu.                172800  IN  NS  a.edu-servers.net.
edu.                172800  IN  NS  g.edu-servers.net.
edu.                172800  IN  NS  j.edu-servers.net.
edu.                172800  IN  NS  k.edu-servers.net.
edu.                172800  IN  NS  m.edu-servers.net.
edu.                172800  IN  NS  l.edu-servers.net.
edu.                172800  IN  NS  h.edu-servers.net.
edu.                172800  IN  NS  c.edu-servers.net.
edu.                172800  IN  NS  e.edu-servers.net.
edu.                172800  IN  NS  d.edu-servers.net.

;; ADDITIONAL SECTION:
b.edu-servers.net. 172800  IN  A   192.33.14.30
b.edu-servers.net. 172800  IN  AAAA 2001:503:231d::2:30
f.edu-servers.net. 172800  IN  A   192.35.51.30
f.edu-servers.net. 172800  IN  AAAA 2001:503:d414::30
i.edu-servers.net. 172800  IN  A   192.43.172.30
i.edu-servers.net. 172800  IN  AAAA 2001:503:39c1::30
a.edu-servers.net. 172800  IN  A   192.5.6.30
a.edu-servers.net. 172800  IN  AAAA 2001:503:a83e::2:30
g.edu-servers.net. 172800  IN  A   192.42.93.30
g.edu-servers.net. 172800  IN  AAAA 2001:503:eea3::30
j.edu-servers.net. 172800  IN  A   192.48.79.30
j.edu-servers.net. 172800  IN  AAAA 2001:502:7094::30
k.edu-servers.net. 172800  IN  A   192.52.178.30
k.edu-servers.net. 172800  IN  AAAA 2001:503:d2d::30
m.edu-servers.net. 172800  IN  A   192.55.83.30
```

```

m.edu-servers.net. 172800 IN AAAA 2001:501:b1f9::30
l.edu-servers.net. 172800 IN A 192.41.162.30
l.edu-servers.net. 172800 IN AAAA 2001:500:d937::30
h.edu-servers.net. 172800 IN A 192.54.112.30
h.edu-servers.net. 172800 IN AAAA 2001:502:8cc::30
c.edu-servers.net. 172800 IN A 192.26.92.30
c.edu-servers.net. 172800 IN AAAA 2001:503:83eb::30
e.edu-servers.net. 172800 IN A 192.12.94.30
e.edu-servers.net. 172800 IN AAAA 2001:502:1ca1::30
d.edu-servers.net. 172800 IN A 192.31.80.30
d.edu-servers.net. 172800 IN AAAA 2001:500:856e::30

;; Query time: 9 msec
;; SERVER: 2001:503:ba3e::2:30#53(2001:503:ba3e::2:30)
;; WHEN: Wed Mar 03 16:16:33 PST 2021
;; MSG SIZE rcvd: 838

```

Second Command:

```
dig +norecurse @b.edu-servers.net any cs.ucdavis.edu
```

Second Result:

```

; <<>> DiG 9.11.3-lubuntu1.14-Ubuntu <<>> +norecurse @b.edu-servers.net any
cs.ucdavis.edu
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21292
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 3, ADDITIONAL: 7

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;cs.ucdavis.edu.          IN  ANY

;; AUTHORITY SECTION:
ucdavis.edu.             172800 IN  NS  dns-two.ucdavis.edu.
ucdavis.edu.             172800 IN  NS  dns-one.ucdavis.edu.
ucdavis.edu.             172800 IN  NS  dns-three.ucdavis.edu.

;; ADDITIONAL SECTION:
dns-two.ucdavis.edu.     172800 IN  A   128.120.252.10
dns-two.ucdavis.edu.     172800 IN  AAAA 2607:f810:3f0:2::2
dns-one.ucdavis.edu.     172800 IN  A   128.120.252.9
dns-one.ucdavis.edu.     172800 IN  AAAA 2607:f810:3f0:1::1
dns-three.ucdavis.edu.   172800 IN  A   169.237.243.171
dns-three.ucdavis.edu.   172800 IN  AAAA 2607:f810:ce0:10::2

;; Query time: 71 msec
;; SERVER: 2001:503:231d::2:30#53(2001:503:231d::2:30)
;; WHEN: Wed Mar 03 16:19:59 PST 2021
;; MSG SIZE rcvd: 243

```

Third Command:

```
dig +norecurse @dns-two.ucdavis.edu any cs.ucdavis.edu
```

Third Response:

```
; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @dns-two.ucdavis.edu any
cs.ucdavis.edu
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 50119
;; flags: qr aa ra; QUERY: 1, ANSWER: 10, AUTHORITY: 0, ADDITIONAL: 8

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 4096
; COOKIE: f87b880d7c8ec3bfd9d0363b604027f008ce4678825de2df (good)
;; QUESTION SECTION:
;cs.ucdavis.edu.          IN  ANY

;; ANSWER SECTION:
cs.ucdavis.edu.          28800 IN  SOA  infoblox.ucdavis.edu. netadmin.ucdavis.edu.
99033107 10800 900 1209600 900
cs.ucdavis.edu.          28800 IN  MX   5  sfire.cs.ucdavis.edu.
cs.ucdavis.edu.          28800 IN  TXT  "v=spf1 ip4:169.237.6.1 ip4:169.237.6.11
include:_spf.google.com ~all"
cs.ucdavis.edu.          28800 IN  A    151.101.2.132
cs.ucdavis.edu.          28800 IN  A    151.101.194.132
cs.ucdavis.edu.          28800 IN  A    151.101.66.132
cs.ucdavis.edu.          28800 IN  A    151.101.130.132
cs.ucdavis.edu.          28800 IN  NS   dns-two.ucdavis.edu.
cs.ucdavis.edu.          28800 IN  NS   dns-three.ucdavis.edu.
cs.ucdavis.edu.          28800 IN  NS   dns-one.ucdavis.edu.

;; ADDITIONAL SECTION:
dns-three.ucdavis.edu.   14400 IN  AAAA  2607:f810:ce0:10::2
dns-one.ucdavis.edu.     14400 IN  AAAA  2607:f810:3f0:1::1
dns-two.ucdavis.edu.     14400 IN  AAAA  2607:f810:3f0:2::2
sfire.cs.ucdavis.edu.    28800 IN  A     169.237.6.1
dns-three.ucdavis.edu.   14400 IN  A     169.237.243.171
dns-one.ucdavis.edu.     14400 IN  A     128.120.252.9
dns-two.ucdavis.edu.     14400 IN  A     128.120.252.10

;; Query time: 3 msec
;; SERVER: 2607:f810:3f0:2::2#53(2607:f810:3f0:2::2)
;; WHEN: Wed Mar 03 16:21:04 PST 2021
;; MSG SIZE rcvd: 508
```

List of the DNS servers in the delegation chain:

a.root-servers.net  
b.edu-servers.net  
dns-two.ucdavis.edu

b.

Google:

First command:

```
dig +norecurse @a.root-servers.net any google.com
```

First result:

```
; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @a.root-servers.net any
www.google.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59902
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 13, ADDITIONAL: 27

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

;; AUTHORITY SECTION:
com.          172800  IN  NS  e.gtld-servers.net.
com.          172800  IN  NS  b.gtld-servers.net.
com.          172800  IN  NS  j.gtld-servers.net.
com.          172800  IN  NS  m.gtld-servers.net.
com.          172800  IN  NS  i.gtld-servers.net.
com.          172800  IN  NS  f.gtld-servers.net.
com.          172800  IN  NS  a.gtld-servers.net.
com.          172800  IN  NS  g.gtld-servers.net.
com.          172800  IN  NS  h.gtld-servers.net.
com.          172800  IN  NS  l.gtld-servers.net.
com.          172800  IN  NS  k.gtld-servers.net.
com.          172800  IN  NS  c.gtld-servers.net.
com.          172800  IN  NS  d.gtld-servers.net.

;; ADDITIONAL SECTION:
e.gtld-servers.net. 172800  IN  A    192.12.94.30
e.gtld-servers.net. 172800  IN  AAAA 2001:502:1ca1::30
b.gtld-servers.net. 172800  IN  A    192.33.14.30
b.gtld-servers.net. 172800  IN  AAAA 2001:503:231d::2:30
j.gtld-servers.net. 172800  IN  A    192.48.79.30
j.gtld-servers.net. 172800  IN  AAAA 2001:502:7094::30
m.gtld-servers.net. 172800  IN  A    192.55.83.30
m.gtld-servers.net. 172800  IN  AAAA 2001:501:b1f9::30
i.gtld-servers.net. 172800  IN  A    192.43.172.30
```

```

i.gtld-servers.net. 172800 IN AAAA 2001:503:39c1::30
f.gtld-servers.net. 172800 IN A 192.35.51.30
f.gtld-servers.net. 172800 IN AAAA 2001:503:d414::30
a.gtld-servers.net. 172800 IN A 192.5.6.30
a.gtld-servers.net. 172800 IN AAAA 2001:503:a83e::2:30
g.gtld-servers.net. 172800 IN A 192.42.93.30
g.gtld-servers.net. 172800 IN AAAA 2001:503:eea3::30
h.gtld-servers.net. 172800 IN A 192.54.112.30
h.gtld-servers.net. 172800 IN AAAA 2001:502:8cc::30
l.gtld-servers.net. 172800 IN A 192.41.162.30
l.gtld-servers.net. 172800 IN AAAA 2001:500:d937::30
k.gtld-servers.net. 172800 IN A 192.52.178.30
k.gtld-servers.net. 172800 IN AAAA 2001:503:d2d::30
c.gtld-servers.net. 172800 IN A 192.26.92.30
c.gtld-servers.net. 172800 IN AAAA 2001:503:83eb::30
d.gtld-servers.net. 172800 IN A 192.31.80.30
d.gtld-servers.net. 172800 IN AAAA 2001:500:856e::30

;; Query time: 9 msec
;; SERVER: 2001:503:ba3e::2:30#53(2001:503:ba3e::2:30)
;; WHEN: Wed Mar 03 16:37:53 PST 2021
;; MSG SIZE rcvd: 839

```

Second command:

```
dig +norecurse @e.gtld-servers.net any google.com
```

Second result:

```

; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @e.gtld-servers.net any
www.google.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 10256
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 4, ADDITIONAL: 9

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

;; AUTHORITY SECTION:
google.com.      172800 IN  NS  ns2.google.com.
google.com.      172800 IN  NS  ns1.google.com.
google.com.      172800 IN  NS  ns3.google.com.
google.com.      172800 IN  NS  ns4.google.com.

;; ADDITIONAL SECTION:
ns2.google.com.   172800 IN  AAAA 2001:4860:4802:34::a
ns2.google.com.   172800 IN  A    216.239.34.10
ns1.google.com.   172800 IN  AAAA 2001:4860:4802:32::a
ns1.google.com.   172800 IN  A    216.239.32.10

```

```

ns3.google.com.      172800  IN  AAAA      2001:4860:4802:36::a
ns3.google.com.      172800  IN  A          216.239.36.10
ns4.google.com.      172800  IN  AAAA      2001:4860:4802:38::a
ns4.google.com.      172800  IN  A          216.239.38.10

;; Query time: 23 msec
;; SERVER: 2001:502:1ca1::30#53(2001:502:1ca1::30)
;; WHEN: Wed Mar 03 16:38:52 PST 2021
;; MSG SIZE rcvd: 291

```

Third command:

```
dig +norecurse @ns2.google.com any google.com
```

Third result:

```

; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @ns2.google.com any
www.google.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 5951
;; flags: qr aa; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

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

;; ANSWER SECTION:
www.google.com.          300 IN  A      172.217.6.68
www.google.com.          300 IN  AAAA   2607:f8b0:4005:80a::2004

;; Query time: 18 msec
;; SERVER: 2001:4860:4802:34::a#53(2001:4860:4802:34::a)
;; WHEN: Wed Mar 03 16:39:30 PST 2021
;; MSG SIZE rcvd: 87

```

Google delegation chain:

```

a.root-servers.net
e.gtld-servers.net
ns2.google.com

```

Yahoo:

First command:

```
dig +norecurse @a.root-servers.net any yahoo.com
```

First output:

```
; <<>> DiG 9.11.3-lubuntu1.14-Ubuntu <<>> +norecurse @a.root-servers.net any
www.yahoo.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 50329
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 13, ADDITIONAL: 27

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

;; AUTHORITY SECTION:
com.                172800  IN  NS   e.gtld-servers.net.
com.                172800  IN  NS   b.gtld-servers.net.
com.                172800  IN  NS   j.gtld-servers.net.
com.                172800  IN  NS   m.gtld-servers.net.
com.                172800  IN  NS   i.gtld-servers.net.
com.                172800  IN  NS   f.gtld-servers.net.
com.                172800  IN  NS   a.gtld-servers.net.
com.                172800  IN  NS   g.gtld-servers.net.
com.                172800  IN  NS   h.gtld-servers.net.
com.                172800  IN  NS   l.gtld-servers.net.
com.                172800  IN  NS   k.gtld-servers.net.
com.                172800  IN  NS   c.gtld-servers.net.
com.                172800  IN  NS   d.gtld-servers.net.

;; ADDITIONAL SECTION:
e.gtld-servers.net. 172800  IN  A    192.12.94.30
e.gtld-servers.net. 172800  IN  AAAA 2001:502:1ca1::30
b.gtld-servers.net. 172800  IN  A    192.33.14.30
b.gtld-servers.net. 172800  IN  AAAA 2001:503:231d::2:30
j.gtld-servers.net. 172800  IN  A    192.48.79.30
j.gtld-servers.net. 172800  IN  AAAA 2001:502:7094::30
m.gtld-servers.net. 172800  IN  A    192.55.83.30
m.gtld-servers.net. 172800  IN  AAAA 2001:501:b1f9::30
i.gtld-servers.net. 172800  IN  A    192.43.172.30
i.gtld-servers.net. 172800  IN  AAAA 2001:503:39c1::30
f.gtld-servers.net. 172800  IN  A    192.35.51.30
f.gtld-servers.net. 172800  IN  AAAA 2001:503:d414::30
a.gtld-servers.net. 172800  IN  A    192.5.6.30
a.gtld-servers.net. 172800  IN  AAAA 2001:503:a83e::2:30
g.gtld-servers.net. 172800  IN  A    192.42.93.30
g.gtld-servers.net. 172800  IN  AAAA 2001:503:eea3::30
h.gtld-servers.net. 172800  IN  A    192.54.112.30
h.gtld-servers.net. 172800  IN  AAAA 2001:502:8cc::30
l.gtld-servers.net. 172800  IN  A    192.41.162.30
l.gtld-servers.net. 172800  IN  AAAA 2001:500:d937::30
k.gtld-servers.net. 172800  IN  A    192.52.178.30
k.gtld-servers.net. 172800  IN  AAAA 2001:503:d2d::30
```

```
c.gtld-servers.net. 172800 IN A 192.26.92.30
c.gtld-servers.net. 172800 IN AAAA 2001:503:83eb::30
d.gtld-servers.net. 172800 IN A 192.31.80.30
d.gtld-servers.net. 172800 IN AAAA 2001:500:856e::30

;; Query time: 9 msec
;; SERVER: 2001:503:ba3e::2:30#53(2001:503:ba3e::2:30)
;; WHEN: Wed Mar 03 16:40:14 PST 2021
;; MSG SIZE rcvd: 838
```

Second command:

```
dig +norecurse @e.gtld-servers.net any yahoo.com
```

Second output:

```
; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @e.gtld-servers.net any
www.yahoo.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 28664
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 5, ADDITIONAL: 10

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

;; AUTHORITY SECTION:
yahoo.com. 172800 IN NS ns1.yahoo.com.
yahoo.com. 172800 IN NS ns5.yahoo.com.
yahoo.com. 172800 IN NS ns2.yahoo.com.
yahoo.com. 172800 IN NS ns3.yahoo.com.
yahoo.com. 172800 IN NS ns4.yahoo.com.

;; ADDITIONAL SECTION:
ns1.yahoo.com. 172800 IN AAAA 2001:4998:130::1001
ns1.yahoo.com. 172800 IN A 68.180.131.16
ns5.yahoo.com. 172800 IN A 202.165.97.53
ns5.yahoo.com. 172800 IN AAAA 2406:2000:ff60::53
ns2.yahoo.com. 172800 IN AAAA 2001:4998:140::1002
ns2.yahoo.com. 172800 IN A 68.142.255.16
ns3.yahoo.com. 172800 IN AAAA 2406:8600:f03f:1f8::1003
ns3.yahoo.com. 172800 IN A 27.123.42.42
ns4.yahoo.com. 172800 IN A 98.138.11.157

;; Query time: 24 msec
;; SERVER: 2001:502:1ca1::30#53(2001:502:1ca1::30)
;; WHEN: Wed Mar 03 16:41:14 PST 2021
;; MSG SIZE rcvd: 324
```



Third command:

```
dig +norecurse @ns1.yahoo.com any yahoo.com
```

Third output:

```
; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @ns1.yahoo.com any
www.yahoo.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25381
;; flags: qr aa; QUERY: 1, ANSWER: 1, AUTHORITY: 5, ADDITIONAL: 10

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 1272
; COOKIE: 9d21a36b1e54511186f12ffa60402ccdaefae5c7f875c675 (good)
;; QUESTION SECTION:
;www.yahoo.com.          IN  ANY

;; ANSWER SECTION:
www.yahoo.com.          60  IN  CNAME  new-fp-shed.wg1.b.yahoo.com.

;; AUTHORITY SECTION:
yahoo.com.              172800  IN  NS  ns5.yahoo.com.
yahoo.com.              172800  IN  NS  ns2.yahoo.com.
yahoo.com.              172800  IN  NS  ns3.yahoo.com.
yahoo.com.              172800  IN  NS  ns1.yahoo.com.
yahoo.com.              172800  IN  NS  ns4.yahoo.com.

;; ADDITIONAL SECTION:
ns1.yahoo.com.          86400  IN  AAAA  2001:4998:130::1001
ns2.yahoo.com.          86400  IN  AAAA  2001:4998:140::1002
ns3.yahoo.com.          1800   IN  AAAA  2406:8600:f03f:1f8::1003
ns5.yahoo.com.          86400  IN  AAAA  2406:2000:ff60::53
ns1.yahoo.com.          1209600  IN  A  68.180.131.16
ns2.yahoo.com.          1209600  IN  A  68.142.255.16
ns3.yahoo.com.          1800   IN  A  27.123.42.42
ns4.yahoo.com.          1209600  IN  A  98.138.11.157
ns5.yahoo.com.          86400  IN  A  202.165.97.53

;; Query time: 7 msec
;; SERVER: 2001:4998:130::1001#53(2001:4998:130::1001)
;; WHEN: Wed Mar 03 16:41:49 PST 2021
;; MSG SIZE rcvd: 384
```

Yahoo delegation chain:

```
a.root-servers.net
e.gtld-servers.net
ns1.yahoo.com
```

Amazon:

First command:

```
dig +norecurse @a.root-servers.net any amazon.com
```

First output:

```
; <<>> DiG 9.11.3-lubuntu1.14-Ubuntu <<>> +norecurse @a.root-servers.net any
amazon.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 38015
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 13, ADDITIONAL: 27

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; QUESTION SECTION:
;amazon.com.                IN      ANY

;; AUTHORITY SECTION:
com.          172800  IN      NS      a.gtld-servers.net.
com.          172800  IN      NS      b.gtld-servers.net.
com.          172800  IN      NS      c.gtld-servers.net.
com.          172800  IN      NS      d.gtld-servers.net.
com.          172800  IN      NS      e.gtld-servers.net.
com.          172800  IN      NS      f.gtld-servers.net.
com.          172800  IN      NS      g.gtld-servers.net.
com.          172800  IN      NS      h.gtld-servers.net.
com.          172800  IN      NS      i.gtld-servers.net.
com.          172800  IN      NS      j.gtld-servers.net.
com.          172800  IN      NS      k.gtld-servers.net.
com.          172800  IN      NS      l.gtld-servers.net.
com.          172800  IN      NS      m.gtld-servers.net.

;; ADDITIONAL SECTION:
a.gtld-servers.net. 172800  IN      A       192.5.6.30
b.gtld-servers.net. 172800  IN      A       192.33.14.30
c.gtld-servers.net. 172800  IN      A       192.26.92.30
d.gtld-servers.net. 172800  IN      A       192.31.80.30
e.gtld-servers.net. 172800  IN      A       192.12.94.30
f.gtld-servers.net. 172800  IN      A       192.35.51.30
g.gtld-servers.net. 172800  IN      A       192.42.93.30
h.gtld-servers.net. 172800  IN      A       192.54.112.30
i.gtld-servers.net. 172800  IN      A       192.43.172.30
j.gtld-servers.net. 172800  IN      A       192.48.79.30
k.gtld-servers.net. 172800  IN      A       192.52.178.30
l.gtld-servers.net. 172800  IN      A       192.41.162.30
m.gtld-servers.net. 172800  IN      A       192.55.83.30
a.gtld-servers.net. 172800  IN      AAAA    2001:503:a83e::2:30
b.gtld-servers.net. 172800  IN      AAAA    2001:503:231d::2:30
c.gtld-servers.net. 172800  IN      AAAA    2001:503:83eb::30
d.gtld-servers.net. 172800  IN      AAAA    2001:500:856e::30
e.gtld-servers.net. 172800  IN      AAAA    2001:502:1ca1::30
f.gtld-servers.net. 172800  IN      AAAA    2001:503:d414::30
```

```

g.gtld-servers.net. 172800 IN AAAA 2001:503:eea3::30
h.gtld-servers.net. 172800 IN AAAA 2001:502:8cc::30
i.gtld-servers.net. 172800 IN AAAA 2001:503:39c1::30
j.gtld-servers.net. 172800 IN AAAA 2001:502:7094::30
k.gtld-servers.net. 172800 IN AAAA 2001:503:d2d::30
l.gtld-servers.net. 172800 IN AAAA 2001:500:d937::30
m.gtld-servers.net. 172800 IN AAAA 2001:501:b1f9::30

;; Query time: 8 msec
;; SERVER: 2001:503:ba3e::2:30#53(2001:503:ba3e::2:30)
;; WHEN: Wed Mar 03 16:42:46 PST 2021
;; MSG SIZE rcvd: 835

```

Second command:

```
dig +norecurse @a.gtld-servers.net any amazon.com
```

Second output:

```

; <<>> DiG 9.11.3-1ubuntu1.14-Ubuntu <<>> +norecurse @a.gtld-servers.net any
amazon.com
; (2 servers found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 49758
;; flags: qr; QUERY: 1, ANSWER: 0, AUTHORITY: 6, ADDITIONAL: 1

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

;; AUTHORITY SECTION:
amazon.com. 172800 IN NS pdns1.ultradns.net.
amazon.com. 172800 IN NS pdns6.ultradns.co.uk.
amazon.com. 172800 IN NS ns1.p31.dynect.net.
amazon.com. 172800 IN NS ns3.p31.dynect.net.
amazon.com. 172800 IN NS ns2.p31.dynect.net.
amazon.com. 172800 IN NS ns4.p31.dynect.net.

;; Query time: 23 msec
;; SERVER: 2001:503:a83e::2:30#53(2001:503:a83e::2:30)
;; WHEN: Wed Mar 03 16:43:24 PST 2021
;; MSG SIZE rcvd: 188

```

Amazon delegation chain:

```

a.root-servers.net
a.gtld-servers.net

```

