20MCA136-NETWORKING & ADMINISTRATION LAB

LAB EXAM

SUBMITTED BY,

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R MCA-2020-S2

ROLL NO : 42

1. Create a directory SAMPLE under your home directory.

```
vivin@vivin:/home$ ls
vivin
vivin@vivin:/home$ sudo mkdir SAMPLE
vivin@vivin:/home$ ls
SAMPLE  vivin
vivin@vivin:/home$
```

2. Create a sub-directory by name TRIAL under SAMPLE

```
vivin@vivin:/home$ cd SAMPLE
vivin@vivin:/home/SAMPLE$ ls
vivin@vivin:/home/SAMPLE$ sudo mkdir TRIAL
vivin@vivin:/home/SAMPLE$ ls
TRIAL
vivin@vivin:/home/SAMPLE$
```
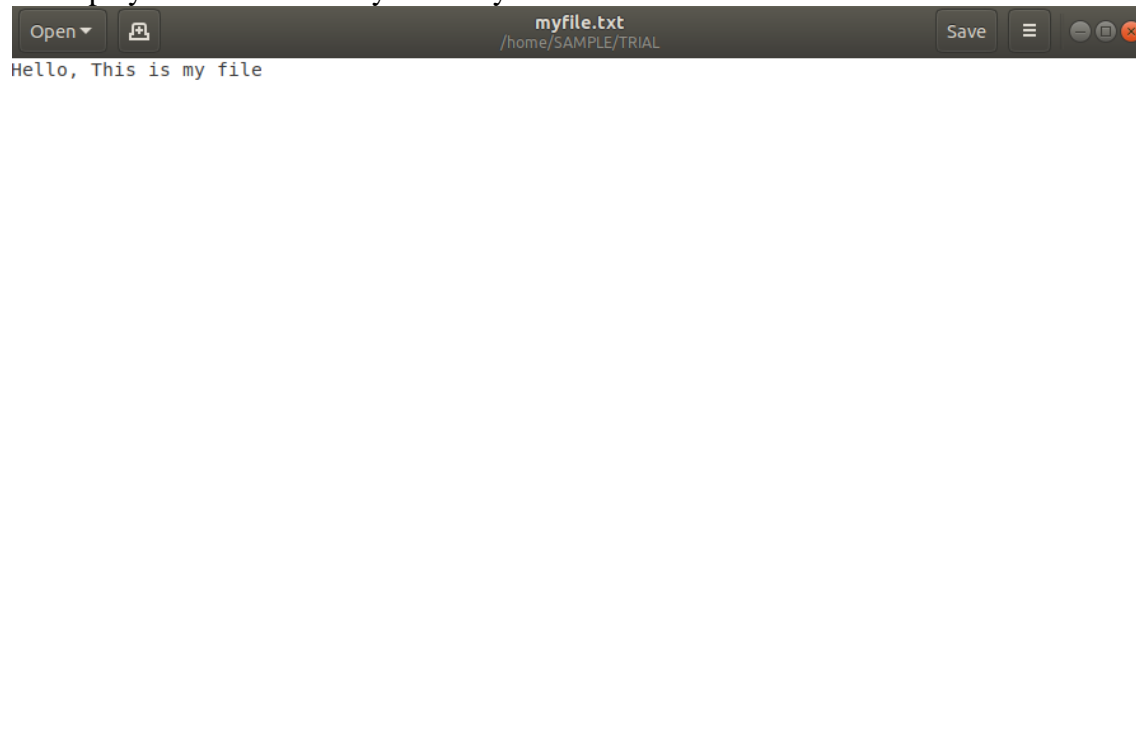
3. Create file1,file2, file3, file4, file5, file6 under TRIAL directory using a single command.

```
vivin@vivin:/home/SAMPLE$ cd TRIAL
vivin@vivin:/home/SAMPLE/TRIAL$ sudo touch file1.txt file2.txt file3.txt file4.t
xt file5.txt file6.txt
vivin@vivin:/home/SAMPLE/TRIAL$ ls
file1.txt  file2.txt  file3.txt  file4.txt  file5.txt  file6.txt
```
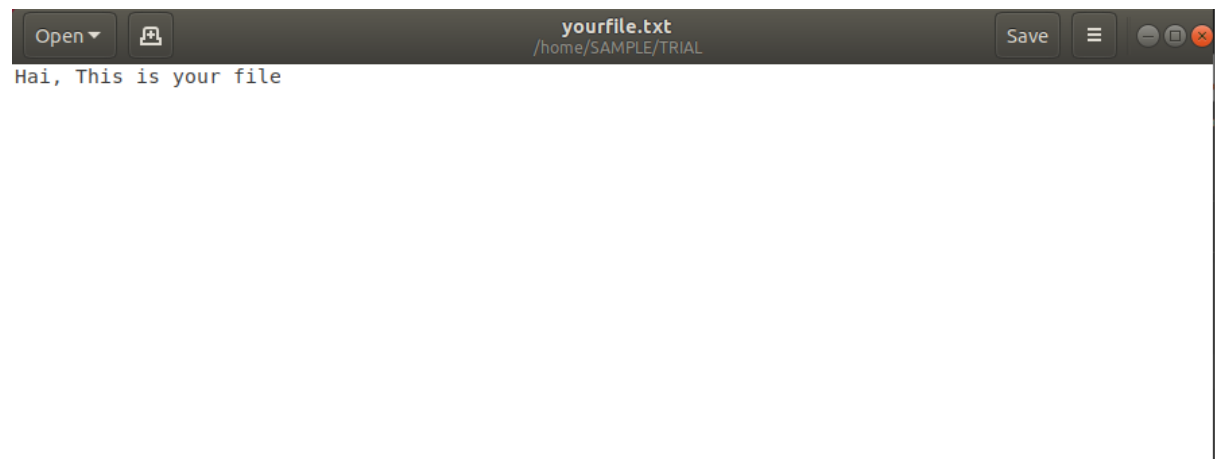
4. Create files myfile and yourfile under Present Working Directory.

```
vivin@vivin:/home/SAMPLE/TRIAL$ ls
file1.txt  file2.txt  file3.txt  file4.txt  file5.txt  file6.txt
vivin@vivin:/home/SAMPLE/TRIAL$ sudo touch myfile.txt yourfile.txt
vivin@vivin:/home/SAMPLE/TRIAL$ ls
file1.txt  file3.txt  file5.txt  myfile.txt
file2.txt  file4.txt  file6.txt  yourfile.txt
```
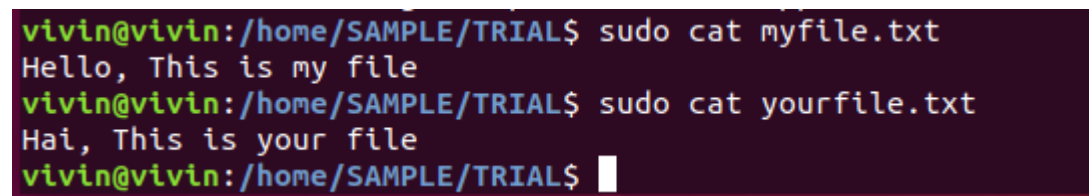
5. Display the contents in myfile and yourfile.

```
Open ▾  🗗            myfile.txt              Save  ≡  ⊖ ⊡ ⊗
                  /home/SAMPLE/TRIAL
Hello, This is my file
```

```
Open ▾  🗗            yourfile.txt            Save  ≡  ⊖ ⊡ ⊗
                  /home/SAMPLE/TRIAL
Hai, This is your file
```

```
vivin@vivin:/home/SAMPLE/TRIAL$ sudo cat myfile.txt
Hello, This is my file
vivin@vivin:/home/SAMPLE/TRIAL$ sudo cat yourfile.txt
Hai, This is your file
vivin@vivin:/home/SAMPLE/TRIAL$
```

6. Copy myfile file to emp

```
vivin@vivin:/home/SAMPLE$ ls
TRIAL
vivin@vivin:/home/SAMPLE$ sudo mkdir emp
vivin@vivin:/home/SAMPLE$ ls
emp  TRIAL
vivin@vivin:/home/SAMPLE$ cd TRIAL
vivin@vivin:/home/SAMPLE/TRIAL$ ls
file1.txt  file3.txt  file5.txt  myfile.txt
file2.txt  file4.txt  file6.txt  yourfile.txt
vivin@vivin:/home/SAMPLE/TRIAL$ sudo cp myfile.txt /home/SAMPLE/emp
vivin@vivin:/home/SAMPLE/TRIAL$ cd ..
vivin@vivin:/home/SAMPLE$ ls
emp  TRIAL
vivin@vivin:/home/SAMPLE$ cd emp
vivin@vivin:/home/SAMPLE/emp$ ls
myfile.txt
vivin@vivin:/home/SAMPLE/emp$ cat myfile.txt
Hello, This is my file
vivin@vivin:/home/SAMPLE/emp$
```

7. Create a supplementary group called College with a group id 30000.Check group is created or not.

```
vivin@vivin:/home/SAMPLE$ sudo groupadd -g 30000 College
vivin@vivin:/home/SAMPLE$ less /etc/group
vivin@vivin:/home/SAMPLE$
```

```
mysql:x:127:
College:x:30000:
(END)
```

8. Execute the following commands and write their output

a. Ping

```
vivin@vivin:/home/SAMPLE$ cd ..
vivin@vivin:/home$ cd ..
vivin@vivin:/$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=116 time=37.6 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=116 time=61.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=116 time=59.7 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=116 time=43.6 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=116 time=125 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=116 time=27.3 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=116 time=25.4 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=116 time=20.3 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=116 time=66.1 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=116 time=22.5 ms
64 bytes from 8.8.8.8: icmp_seq=11 ttl=116 time=30.7 ms
64 bytes from 8.8.8.8: icmp_seq=12 ttl=116 time=21.8 ms
64 bytes from 8.8.8.8: icmp_seq=13 ttl=116 time=49.8 ms
64 bytes from 8.8.8.8: icmp_seq=14 ttl=116 time=21.8 ms
64 bytes from 8.8.8.8: icmp_seq=15 ttl=116 time=21.9 ms
64 bytes from 8.8.8.8: icmp_seq=16 ttl=116 time=20.7 ms
64 bytes from 8.8.8.8: icmp_seq=17 ttl=116 time=21.5 ms
64 bytes from 8.8.8.8: icmp_seq=18 ttl=116 time=22.1 ms
64 bytes from 8.8.8.8: icmp_seq=19 ttl=116 time=19.0 ms
```

b. Traceroute

```
vivin@vivin:/$ traceroute 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 60 byte packets
 1  _gateway (10.0.2.2)  10.481 ms  10.321 ms  0.308 ms
 2  _gateway (10.0.2.2)  10.758 ms  10.685 ms  10.618 ms
vivin@vivin:/$
```

c. Netstat

```
vivin@vivin:/$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 vivin:32834             104.26.3.27:https       TIME_WAIT
tcp        0      0 vivin:54776             server-13-249-208:https ESTABLISHED
tcp        0      0 vivin:52796             server-54-230-106:https TIME_WAIT
tcp        0      0 vivin:47224             server-99-86-20-7:https ESTABLISHED
tcp        0      0 vivin:34194             104.18.164.34:https     TIME_WAIT
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  2      [ ]         DGRAM                     15606    /run/systemd/journal/syslog
unix  18     [ ]         DGRAM                     15608    /run/systemd/journal/dev-log
unix  2      [ ]         DGRAM                     25121    /run/user/1000/systemd/notify
unix  3      [ ]         DGRAM                     15586    /run/systemd/notify
unix  7      [ ]         DGRAM                     15596    /run/systemd/journal/socket
unix  3      [ ]         STREAM     CONNECTED      26944    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      22070    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      20503
unix  3      [ ]         STREAM     CONNECTED      36189
unix  3      [ ]         STREAM     CONNECTED      28451
unix  3      [ ]         STREAM     CONNECTED      25661    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      26447
unix  3      [ ]         STREAM     CONNECTED      31816    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      26886    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      26953
unix  3      [ ]         STREAM     CONNECTED      25846
unix  3      [ ]         STREAM     CONNECTED      20755    /run/systemd/journal/stdout
unix  3      [ ]         STREAM     CONNECTED      28161    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED      28137    @/tmp/dbus-nWKiCiRv
unix  3      [ ]         STREAM     CONNECTED      25662    /run/systemd/journal/stdout
```

d. Ifconfig

```
vivin@vivin:/$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
        inet6 fe80::34f5:79af:ce05:ed83  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:e6:f9:04  txqueuelen 1000  (Ethernet)
        RX packets 3788  bytes 4962289 (4.9 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1871  bytes 158112 (158.1 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 231  bytes 22471 (22.4 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 231  bytes 22471 (22.4 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

vivin@vivin:/$
```

e. tcpdump

```
vivin@vivin:/$ sudo tcpdump
tcpdump: verbose output suppressed, use -v or -vv for full protocol decode
listening on enp0s3, link-type EN10MB (Ethernet), capture size 262144 bytes
09:52:55.427608 IP vivin.49769 > dns.google.domain: 25989+ [1au] A? connectivity-check.ubuntu.com.
09:52:55.428880 IP vivin.44797 > dns.google.domain: 14158+ [1au] AAAA? connectivity-check.ubuntu.co
09:52:55.448463 IP vivin.41731 > dns.google.domain: 19956+ [1au] PTR? 4.4.8.8.in-addr.arpa. (49)
09:52:55.478627 IP dns.google.domain > vivin.41731: 19956 1/0/1 PTR dns.google. (73)
09:52:55.478632 IP dns.google.domain > vivin.44797: 14158 0/1/1 (119)
09:52:55.478633 IP dns.google.domain > vivin.49769: 25989 3/0/1 A 34.122.121.32, A 35.224.170.84, A
09:52:55.480480 IP vivin.47407 > dns.google.domain: 53979+ [1au] PTR? 15.2.0.10.in-addr.arpa. (51)
09:52:56.426734 IP vivin.56316 > 32.121.122.34.bc.googleusercontent.com.http: Flags [S], seq 344553
7561233 ecr 0,nop,wscale 7], length 0
09:52:56.430612 IP vivin.41484 > dns.google.domain: 26224+ [1au] PTR? 32.121.122.34.in-addr.arpa. (
09:52:56.576389 IP dns.google.domain > vivin.41484: 26224 1/0/1 PTR 32.121.122.34.bc.googleusercont
09:52:57.438238 IP vivin.34565 > dns.google.domain: 46997+ [1au] A? firefox.settings.services.mozil
09:52:57.439187 IP vivin.35142 > dns.google.domain: 10552+ [1au] AAAA? firefox.settings.services.mo
09:52:57.458888 IP dns.google.domain > vivin.35142: 10552 0/1/1 (150)
09:52:57.459811 IP vivin.56316 > 32.121.122.34.bc.googleusercontent.com.http: Flags [S], seq 344553
7562266 ecr 0,nop,wscale 7], length 0
09:52:57.480729 IP dns.google.domain > vivin.34565: 46997 4/0/1 A 99.86.20.72, A 99.86.20.57, A 99.
09:52:57.482707 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [S], seq 17
 2947646262 ecr 0,nop,wscale 7], length 0
09:52:57.487143 IP vivin.34467 > dns.google.domain: 34491+ [1au] PTR? 72.20.86.99.in-addr.arpa. (53
09:52:57.512251 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [S.], seq 6
0], length 0
09:52:57.512416 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 1,
09:52:57.514558 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [P.], seq 1
09:52:57.515417 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [.], ack 51
09:52:57.561396 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 1
09:52:57.598575 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 3
09:52:57.598691 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 5
09:52:57.598715 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 54
09:52:57.598976 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 68
09:52:57.601395 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 6
09:52:57.601548 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 11
09:52:57.607732 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 1
09:52:57.607921 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 19
09:52:57.612823 IP server-99-86-20-72.blr50.r.cloudfront.net.https > vivin.47224: Flags [P.], seq 1
09:52:57.612991 IP vivin.47224 > server-99-86-20-72.blr50.r.cloudfront.net.https: Flags [.], ack 22
```