PRACTICE DRILL -2

Download the contents of "Harry Potter and the Goblet of fire" using the command line from "https://raw.githubusercontent.com/bobdeng/owlreader/master/ERead/assets/books/Harry%20Potter%20and%20the%20Goblet%20of%20Fire.txt"

To download this file we can use wget command,which is used to download files from the server even when the user has not logged on to the system

$ wget URL

After that we can see the file in our directory using ls command

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ wget "https://raw.githubusercontent.com/
bobdeng/owlreader/master/ERead/assets/books/Harry%20Potter%20and%20the%20Goblet%20of%20Fire.txt"
--2022-11-02 21:49:35--  https://raw.githubusercontent.com/bobdeng/owlreader/master/ERead/assets/b
ooks/Harry%20Potter%20and%20the%20Goblet%20of%20Fire.txt
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 2606:50c0:8000::154, 2606:50c0:
8001::154, 2606:50c0:8002::154, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|2606:50c0:8000::154|:443... co
nnected.
HTTP request sent, awaiting response... 200 OK
Length: 1140643 (1.1M) [text/plain]
Saving to: 'Harry Potter and the Goblet of Fire.txt'

Harry Potter and t 100%[===============>]   1.09M   945KB/s    in 1.2s

2022-11-02 21:49:37 (945 KB/s) - 'Harry Potter and the Goblet of Fire.txt' saved [1140643/1140643]

sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ ls
'Harry Potter and the Goblet of Fire.txt'
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
```

Print the first three lines in the book

to display first n lines of the file we can use the head command

```
$ head -lines filename
```

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ head -3 'Harry Potter and the Goblet of
Fire.txt'
Harry Potter and the Goblet of Fire
    By J.K. Rowling

sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
```

\

Print the last 10 lines in the book

we can use the tail command

$ tail -3 filename

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ tail -10 'Harry Potter and the Goblet of
 Fire.txt'
    and Goyle, who were still lying on the floor, covered in hex marks.
    Uncle Vernon was waiting beyond the barrier. Mrs. Weasley was close by him. She hugged Harry v
ery tightly when she saw him and whispered in his ear, "I think Dumbledore will let you come to us
 later in the summer. Keep in touch, Harry."
    "See you. Harry," said Ron, clapping him on the back.
    "'Bye, Harry!" said Hermione, and she did something she had never done before, and kissed him
on the cheek.
    "Harry - thanks," George muttered, while Fred nodded fervently at his side.
    Harry winked at them, turned to Uncle Vernon, and followed him silently from the station.
    There was no point worrying yet, he told himself, as he got into the back of the Dursleys' car
.

    As Hagrid had said, what would come, would come ... and he would have to meet it when it did.
您下载的文件来自http://txt.nokiacn.net糯米社区为你制作
【糯米社区-TXT论坛】-立志要做最新最全的txt文本格式电子书下载论坛!sachin@sachin-Lenovo-ideapasssss
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
```

How many times do the following words occur in the book?

Harry,Ron,Hermione,Dumbledore

to count the occurence of a word we can use the grep commad


```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ grep -o -i Ron "Harry P
otter and the Goblet of Fire.txt" | wc -l
1358
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ grep -o -i Harry "Harry
 Potter and the Goblet of Fire.txt" | wc -l
3172
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ grep -o -i Hermione "Ha
rry Potter and the Goblet of Fire.txt" | wc -l
872
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ grep -o -i Dumbledore "
Harry Potter and the Goblet of Fire.txt" | wc -l
596
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
```

Print lines from 100 through 200 in the book

```
$ sed -n 'startLine,endLined' myFile.txt
```

The -n tells sed do not print lines scanned.
the 123,234 define the range of lines you are interested in
the p is the command to print the line.


```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ sed -n '100,200p' "Harry Potter and the Goblet of Fire.txt"
    "Invite him inside, Wormtail. Where are your manners?"
    The cold voice was coming from the ancient armchair before the fire, but Frank couldn't see the speaker. the sna
ke, on the other hand, was curled up on the rotting hearth rug, like some horrible travesty of a pet dog.
    Wormtail beckoned Frank into the room. Though still deeply shaken, Frank took a
    firmer grip on his walking stick and limped over the threshold.
    The fire was the only source of light in the room; it cast long, spidery shadows upon the walls. Frank stared at
 the back of the armchair; the man inside it seemed to be even smaller than his servant, for Frank couldn't even see
 the back of his head.
    "You heard everything, Muggle?" said the cold voice.
    "What's that you're calling me?" said Frank defiantly, for now that he was inside the room, now that the time ha
d come for some sort of action, he felt braver; it had always been so in the war.
    "I am calling you a Muggle," said the voice coolly. "It means that you are not a wizard."
    "I don't know what you mean by wizard," said Frank, his voice growing steadier.
    "All I know is I've heard enough to interest the police tonight, I have. You've done murder and you're planning
more! And I'll tell youthis too," he added, on a sudden inspiration, "my wife knows I'm up here, and if I don't come
 back --"
    "You have no wife," said te cold voice, very quietly. "Nobody knows you are here. You told nobody that you were
coming. Do not lie to Lord Voldemort, Muggle, for he knows...he always knows..."
    "Is that right?" said Frank roughly. "Lord, is it? Well, I don't think much of your manners, My Lord. Turn 'roun
d and face me like a man, why don't you?"
    "But I am not a man, Muggle," said the cold voice, barely audible now over the crackling of the flames. "I am mu
ch, much more than a man. However...why not? I will face you...Wormtail, come turn my chair around."
    The servant gave a whimper.
    "You heard me, Wormtail."
    Slowly, with his face screwed up, as though he would rather have done anything than approach his master and the
hearth rug where the snake lay, the small man walked forward and began to turn the chair. The snake lifted its ugly
triangular head and hissed slightly as the legs of the chair snagged on its rug.
    And then the chair was facing Frank, and he saw what was sitting in it. His walking stick fell to the floor with
```

How many unique words are present in the book?

We can count the unique word using command sort

```
$ sort -u your_file | wc -l
```

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$ sort -u "Harry Potter and
 the Goblet of Fire.txt" | wc -l
6753
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop/Drill_2$
```

Processes, ports

1-List your browser's process ids (pid) and parent process ids(ppid)

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ pidof chrome
40830 40679 39116 39107 39054 38853 38278 30150 28149 22324 19980 19589 17920
 17873 17855 16130 15820 14514 14504 14463 14448 14438 14418 14389 14374 1371
1 13332 13313 13036 10924 10889 10857 10822 10796 10675 10647 10603 10334 994
6 8375 8346 7053 7019 6644 6632 6609 6597 6596 6578 6556 6527 6506 6223 6062
6036 4684 4646 4354 4298 3403 3371 3340 3327 3193 2977 2855 2836 2803 2781 27
62 2726 2715 2712 2691 2687 2686 2670
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ ps -o ppid=
   31547
   36645
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$
```

2-Stop the browser application from the command line

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ ps -A
   PID TTY              TIME CMD
     1 ?           00:00:13 systemd
     2 ?           00:00:00 kthreadd
     3 ?           00:00:00 rcu_gp
     4 ?           00:00:00 rcu_par_gp
     5 ?           00:00:00 netns
     7 ?           00:00:00 kworker/0:0H-events_highpri
     9 ?           00:00:07 kworker/0:1H-events_highpri
    10 ?           00:00:00 mm_percpu_wq
    11 ?           00:00:00 rcu_tasks_rude_
    12 ?           00:00:00 rcu_tasks_trace
    13 ?           00:01:59 ksoftirqd/0
    14 ?           00:01:28 rcu_sched
```

```
 41823 ?            00:00:20 firefox
```

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ kill 41823
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$
```

3-List the top 3 processes by CPU usage.

$ ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$  ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head
   PID    PPID CMD                    %MEM %CPU
  1749    1486 /usr/bin/gnome-shell    2.4 11.0
  1541    1539 /usr/lib/xorg/Xorg vt2 -dis  2.3  9.8
  2670    1749 /opt/google/chrome/chrome -  4.8  6.8
  2712    2686 /opt/google/chrome/chrome -  2.4  6.1
 39116    2691 /opt/google/chrome/chrome -  1.5  4.0
 19129   19113 /usr/lib/libreoffice/progra  5.3  3.9
 23813    1749 gnome-control-center blueto  0.8  3.7
 40830    2691 /opt/google/chrome/chrome -  1.4  2.8
  6506    2691 /opt/google/chrome/chrome -  3.9  2.7
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$
```

4-List the top 3 processes by memory usage.

Inplcae of %cpu we write %mem

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$  ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%mem | head
   PID    PPID CMD                        %MEM %CPU
 19129   19113 /usr/lib/libreoffice/progra  5.3  3.9
  2670    1749 /opt/google/chrome/chrome -  4.8  6.7
  6506    2691 /opt/google/chrome/chrome -  3.9  2.7
  3340    2691 /opt/google/chrome/chrome -  3.0  2.0
 13313    2691 /opt/google/chrome/chrome -  2.5  1.0
  2712    2686 /opt/google/chrome/chrome -  2.4  6.1
  1749    1486 /usr/bin/gnome-shell         2.4 11.0
  1541    1539 /usr/lib/xorg/Xorg vt2 -dis  2.3  9.8
  4298    2691 /opt/google/chrome/chrome -  2.3  1.0
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$
```

5-Display all active connections and the corresponding TCP / UDP ports.

$ netstat -lt - To list only the listening tcp ports

$ netstat -lu - To list only the listening udp ports.

```
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ netstat -lt
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 localhost:domain        0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:7070            0.0.0.0:*               LISTEN
tcp        0      0 localhost:ipp           0.0.0.0:*               LISTEN
tcp6       0      0 ip6-localhost:ipp       [::]:*                  LISTEN
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$ netstat -lu
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 localhost:domain        0.0.0.0:*
udp        0      0 0.0.0.0:57704           0.0.0.0:*
udp        0      0 0.0.0.0:631             0.0.0.0:*
udp        0      0 0.0.0.0:50001           0.0.0.0:*
udp        0      0 224.0.0.251:mdns        0.0.0.0:*
udp        0      0 224.0.0.251:mdns        0.0.0.0:*
udp        0      0 0.0.0.0:mdns            0.0.0.0:*
udp6       0      0 [::]:mdns               [::]:*
udp6       0      0 [::]:46601              [::]:*
sachin@sachin-Lenovo-ideapad-300-15ISK:~/Desktop$
```

6-Find the pid of the process that is listening on port 5432

since no process was listening to port 5432 , so we checked the port 5353

and chrome processes was listening to this port

we checked it using netstat command

```
root@sachin-Lenovo-ideapad-300-15ISK:/# netstat -ltnup | grep ':5432'
root@sachin-Lenovo-ideapad-300-15ISK:/# netstat -ltnup | grep ':5353'
udp        0      0 224.0.0.251:5353        0.0.0.0:*                           2670/chrome --enabl
udp        0      0 224.0.0.251:5353        0.0.0.0:*                           2715/chrome --type=
udp        0      0 0.0.0.0:5353            0.0.0.0:*                           851/avahi-daemon: r
udp6       0      0 :::5353                 :::*                                851/avahi-daemon: r
root@sachin-Lenovo-ideapad-300-15ISK:/#
```

7-Start a Python HTTP server on port 8000

to start the python server we must have python in our system

so first we install it.then start the server

> $ python3 -m http.server 8000

```
root@sachin-Lenovo-ideapad-300-15ISK:/# python3 -m http.server 8000
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
```

8-Open another tab. Stop the process you started in the previous step

First we find the pid of the process which was running on port 8000

then using kill command terminates the process

```
root@sachin-Lenovo-ideapad-300-15ISK:/home/sachin/Desktop# netstat -ltnup | grep
 ':8000'
tcp        0      0 0.0.0.0:8000            0.0.0.0:*               LISTEN
47971/python3
root@sachin-Lenovo-ideapad-300-15ISK:/home/sachin/Desktop# kill 47971
root@sachin-Lenovo-ideapad-300-15ISK:/home/sachin/Desktop#
```

```
root@sachin-Lenovo-ideapad-300-15ISK:/# python3 -m http.server 8000
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...


Terminated
root@sachin-Lenovo-ideapad-300-15ISK:/#
root@sachin-Lenovo-ideapad-300-15ISK:/#
root@sachin-Lenovo-ideapad-300-15ISK:/#
```

9-Start a Python HTTP server on port 90

```
root@sachin-Lenovo-ideapad-300-15ISK:/home/sachin/Desktop# python3 -m http.serve
r 8000
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
```

Misc

1-What's your local IP address?

132.154.38.21

First we have to install curl tool

$ snap install curl

then use the command

$ curl ifconfig.me

```
root@sachin-Lenovo-ideapad-300-15ISK:/# snap install curl
curl 7.85.0 from Wouter van Bommel (woutervb) installed
root@sachin-Lenovo-ideapad-300-15ISK:/# curl ifconfig.me
132.154.38.21root@sachin-Lenovo-ideapad-300-15ISK:/#
```

2-Find the IP address of `google.com`

$dig website

```
root@sachin-Lenovo-ideapad-300-15ISK:/#
root@sachin-Lenovo-ideapad-300-15ISK:/# dig google.com

; <<>> DiG 9.18.1-1ubuntu1.1-Ubuntu <<>> google.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 16419
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;google.com.                    IN      A

;; ANSWER SECTION:
google.com.             21      IN      A       142.250.206.142

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Thu Nov 03 01:13:31 IST 2022
;; MSG SIZE  rcvd: 55

root@sachin-Lenovo-ideapad-300-15ISK:/#
```

the ip is availabe in ANSWER SECTION - 142.250.206.142

3-How to check if Internet is working using CLI?

We can ping to any website and see the transmission of packets that means our machine is connected to internet

$ ping google.com

```
root@sachin-Lenovo-ideapad-300-15ISK:/# ping google.com
PING google.com(del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e)) 56 data bytes
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=1 ttl=117 time=75.1 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=2 ttl=117 time=528 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=3 ttl=117 time=76.3 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=4 ttl=117 time=116 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=5 ttl=117 time=70.9 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=6 ttl=117 time=69.3 ms
64 bytes from del11s07-in-x0e.1e100.net (2404:6800:4002:812::200e): icmp_seq=7 ttl=117 time=515 ms
```

4-Where is the `node` command located? What about `code`?

Node can be found in the bin folder

/usr/local/bin/node

```
root@sachin-Lenovo-ideapad-300-15ISK:/usr/local/bin# ls
corepack  n  node  npm  npx
root@sachin-Lenovo-ideapad-300-15ISK:/usr/local/bin#
```