Create an file named file.txt, create an user sampleuser. Change the ownership of the file to sampleuser

sudo su
touch file.txt
useradd sampleuser
chown sampleuser file.txt

Switch to sample user in terminal then change the permission of the file.txt to the user and group as rwx

su sampleuser
whoami
ls -l
chmod u+rwx file.txt
ls -l
chmod g+rwx file.txt
ls -l

Output:

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo su
root@raji-VivoBook-ASUSLaptop-X409MA:/home/raji/practice/linux# touch file.txt
root@raji-VivoBook-ASUSLaptop-X409MA:/home/raji/practice/linux# useradd sampleuser
root@raji-VivoBook-ASUSLaptop-X409MA:/home/raji/practice/linux# chown sampleuser file.txt
root@raji-VivoBook-ASUSLaptop-X409MA:/home/raji/practice/linux# su sampleuser
$ whoami
sampleuser
$ ls -l
total 0
-rw-r--r-- 1 sampleuser root 0 Jun 16 13:38 file.txt
$ chmod u+rwx file.txt
$ ls -l
total 0
-rwxr--r-- 1 sampleuser root 0 Jun 16 13:38 file.txt
$ chmod g+rwx file.txt
$ ls -l
total 0
-rwxrwxr-- 1 sampleuser root 0 Jun 16 13:38 file.txt
$ 
```

Increase the open file limit

ulimit -n 100000

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -n
1024
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -Hn
1048576
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -Sn
1024
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -n 100000
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -n
100000
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -Hn
100000
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ulimit -Sn
100000
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ █
```

For Permanent change in value:
- o Go to /etc/systemd/system.conf
- o Uncomment DefaultLimitNOFILE and set limit to 100000

Increase the swapsize by adding new swap storage

sudo swapon --show
free -h
sudo fallocate -l 1G /swapfile
ls -l /swapfile
sudo chmod 600 /swapfile
ls -l /swapfile
sudo mkswap /swapfile
sudo swapon /swapfile
sudo swapon --show

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapon --show
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ free -h
              total        used        free      shared  buff/cache   available
Mem:          3.7Gi       701Mi       1.8Gi       239Mi       1.2Gi       2.5Gi
Swap:            0B          0B          0B
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo fallocate -l 1G /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ls -l /swapfile
-rw-r--r-- 1 root root 1073741824 Jun 16 14:08 /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo chmod 600 /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ls -l /swapfile
-rw------- 1 root root 1073741824 Jun 16 14:08 /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo mkswap /swapfile
Setting up swapspace version 1, size = 1024 MiB (1073737728 bytes)
no label, UUID=6bf78667-1522-4019-9816-3a7a195dcf71
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapon /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapon --show
NAME       TYPE  SIZE USED PRIO
/swapfile file 1024M   0B   -2
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$
```

Remove the swap storage

sudo swapon –show
free -h
sudo swapoff -a
sudo rm /swapfile
sudo swapon –show
free -h

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapon --show
NAME       TYPE  SIZE USED PRIO
/swapfile file 1024M   0B   -2
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ free -h
              total        used        free      shared  buff/cache   available
Mem:          3.7Gi       693Mi       1.8Gi       255Mi       1.2Gi       2.5Gi
Swap:         1.0Gi          0B       1.0Gi
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapoff -a
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo rm /swapfile
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ sudo swapon --show
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ free -h
              total        used        free      shared  buff/cache   available
Mem:          3.7Gi       696Mi       1.8Gi       255Mi       1.2Gi       2.5Gi
Swap:            0B          0B          0B
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$
```

Script that will read the file content.txt that contains the names,age,job title and print the value in this order "name(age) – jobtitle"

content.txt

Raj 30 Developer
Ram 25 Ops

Gokul 21 Intern

Sundar 45 CEO

Anil 38 SRE

readContent

```bash
#!/bin/bash
# Author: Rajarajeshwari Sridharan
# Date: 16/06/2022
# Description: Read from "content.txt" and print it
# Date Modified: 16/06/2022

input='content.txt'
i=1
while read line;
do
    if [[ -n $line ]]
    then
        details=($line)
        echo "${details[0]}(${details[1]}) - ${details[2]}"
    fi
    i=$((i+1))
done < $input
```

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ./readContent
Raj(30) - Developer
Ram(25) - Ops
Gokul(21) - Intern
Sundar(45) - CEO
Anil(38) - SRE
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ █
```

Script that will get the company name as arguments(command line arguments) and print their products by parsing the following json file

jsonfile

```
{
"Ibm": ["RedHat","Mainframe","IBM cloud","RHEL"],
"google": ["k8s","kaggle","firebase"],
"microsoft": ["windows","azure","office365"],
"amazon": ["AWS","AWS Gov","Amplify"],
"softwareag": ["webmethods","AIRS","ADABAS","CumIOT"]
}
```

companyproducs

```bash
#!/bin/bash
# Author: Rajarajeshwari Sridharan
# Date: 16/06/2022
# Description: Printing all products of given company
# Date Modified: 16/06/2022

input='jsonfile'
for i in $*
do
     echo $i
     echo jq --arg v $i '.[$v]' $input
done
```

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ./companyproducts Ibm softwareag microsoft
Ibm
[ "RedHat", "Mainframe", "IBM cloud", "RHEL" ]
softwareag
[ "webmethods", "AIRS", "ADABAS", "CumIOT" ]
microsoft
[ "windows", "azure", "office365" ]
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$
```

Script that will calculate the sum of prime numbers between 0 to an given number(to be given as an argument) name it child.sh, create another script named parent.sh which check if the child script exists in current dir and if exists change permission to execute for current user and call the child script from the parent script passing the number as argument

child.sh
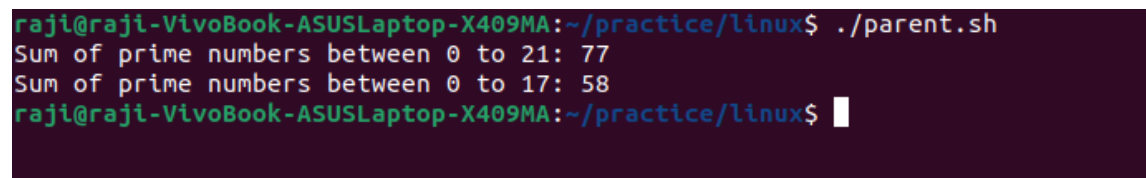
```
#!/bin/bash
# Author: Rajarajeshwari Sridharan
# Date: 16/06/2022
# Description: To calculate sum of prime numbers between 0 and n
# Date Modified: 16/06/2022

n=$1
sum=0
for ((i=2;i<=n;i++))
do
     flag=0
     for ((j=2;j<i;j++))
     do
          if [ expr $i % $j -eq 0 ]
          then
                flag=1
                break
          fi
     done
     if [ $flag -eq 0 ]
     then
          sum=expr $sum + $j
     fi
done
echo "Sum of prime numbers between 0 to $n: $sum"
```

parent.sh

```bash
#!/bin/bash
# Author: Rajarajeshwari Sridharan
# Date: 16/06/2022
# Description: To pass n as argument to child.sh
# Date Modified: 16/06/2022

file='child.sh'
if [ -f "$file" ];
then
      chmod a+x $file
      ./$file 21
      ./$file 17
fi
```

```
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$ ./parent.sh
Sum of prime numbers between 0 to 21: 77
Sum of prime numbers between 0 to 17: 58
raji@raji-VivoBook-ASUSLaptop-X409MA:~/practice/linux$
```

Install the apache httpd server(centos preferred), and the home page should say "SoftwareAG"

sudo apt-get install apache2 -y
//Go to /var/www/html
sudo nano index.html
//Replace the body content with <h1>Software AG</h1>

Make the Https server an Linux systemd service and write an script to stop, start and restart the server via systemctl

vim httpserver.sh
chmod +x httpserver.sh

cd /etc/systemd/system
sudo vim httpService.service

sudo systemctl start httpService
sudo systemctl stop httpService
sudo systemctl restart httpService

httpserver.sh

```
#!/bin/bash
while true
do
      python3 -m http.server 8000
done
```

httpService.service

```
[Service]
ExecStart=/home/raji/practice/linux/httpserver.sh
```