

به نام خدا

آزمون پایانی آزمایشگاه سیستم عامل

فرزان رحمانی ۹۹۵۲۱۲۷۱

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```
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ sudo cp /etc/shadow /home/farzanrahmani_99521271/Desktop/
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ ls -l
total 60
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 Feb 26 21:16 Farzan
drwxrwxr-x 2 farzanrahmani_99521271 adm 4096 Feb 26 21:16 OS_lab
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 30 Apr 11 10:37 abbas.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 224 Apr 11 09:56 badlogins.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 16 Mar 1 13:55 farzan.go
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 184 Mar 1 13:45 finded.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 67 Mar 1 14:11 grade.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 298 Mar 1 13:34 hello.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 67 Apr 11 10:03 myfile.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 10 Mar 1 13:56 open_farzan.txt
-rw-r--r-- 1 root root 1632 Jun 7 10:29 shadow
drwxrwxr-x 3 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 9 10:56 shell_script
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 2510 Mar 1 14:17 test.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 536 Mar 1 13:53 test2.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 57 Mar 1 14:15 text.txt
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ sudo chmod 777 shadow
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ ls -l
total 60
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 Feb 26 21:16 Farzan
drwxrwxr-x 2 farzanrahmani_99521271 adm 4096 Feb 26 21:16 OS_lab
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 30 Apr 11 10:37 abbas.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 224 Apr 11 09:56 badlogins.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 16 Mar 1 13:55 farzan.go
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 184 Mar 1 13:45 finded.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 67 Mar 1 14:11 grade.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 298 Mar 1 13:34 hello.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 67 Apr 11 10:03 myfile.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 10 Mar 1 13:56 open_farzan.txt
-rwxrwxrwx 1 root root 1632 Jun 7 10:29 shadow
drwxrwxr-x 3 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 9 10:56 shell_script
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 2510 Mar 1 14:17 test.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 536 Mar 1 13:53 test2.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 57 Mar 1 14:15 text.txt
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$
```

از دستور زیر استفاده می کنیم:

```
awk -F ":" '$1 ~ /^s/ { print $1 }' /etc/passwd | wc -c
```

```

farzanrahmani_99521271@DESKTOP-955QSI1: $ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin)/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106:./nonexistent:/usr/sbin/nologin
syslog:x:104:110:/home/syslog:/usr/sbin/nologin
_apt:x:105:65534:./nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,:/var/lib/tpm:/bin/false
uuidd:x:107:112:./run/uuidd:/usr/sbin/nologin
tcpdump:x:108:113:./nonexistent:/usr/sbin/nologin
sshd:x:109:65534:./run/sshd:/usr/sbin/nologin
landscape:x:110:115:./var/lib/landscape:/usr/sbin/nologin
pollinate:x:111:1:./var/cache/pollinate:/bin/false
farzan_rahmani:x:1000:1000,,,:/home/farzan_rahmani:/bin/bash
rtkit:x:112:120:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:113:122:user for cups-pk-helper service,,:/home/cups-pk-helper:/usr/sbin/nologin
geoclue:x:114:123:./var/lib/geoclue:/usr/sbin/nologin

```

```

tcpdump:x:108:113:./nonexistent:/usr/sbin/nologin
sshd:x:109:65534:./run/sshd:/usr/sbin/nologin
landscape:x:110:115:./var/lib/landscape:/usr/sbin/nologin
pollinate:x:111:1:./var/cache/pollinate:/bin/false
farzan_rahmani:x:1000:1000,,,:/home/farzan_rahmani:/bin/bash
rtkit:x:112:120:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:113:122:user for cups-pk-helper service,,:/home/cups-pk-helper:/usr/sbin/nologin
geoclue:x:114:123:./var/lib/geoclue:/usr/sbin/nologin
dnsmasq:x:115:65534:dnsmasq,,:/var/lib/misc:/usr/sbin/nologin
pulse:x:116:124:PulseAudio daemon,,:/var/run/pulse:/usr/sbin/nologin
usbmux:x:117:46:usbmux daemon,,:/var/lib/usbmux:/usr/sbin/nologin
avahi:x:118:126:Avahi mDNS daemon,,:/var/run/avahi-daemon:/usr/sbin/nologin
saned:x:119:128:./var/lib/saned:/usr/sbin/nologin
colord:x:120:129:colord colour management daemon,,:/var/lib/colord:/usr/sbin/nologin
gdm:x:121:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
farzanrahmani_99521271:x:1001:1001:Farzan Rahmani,,02177546250,989128357533:/home/farzanrahmani_99521271:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:./usr/sbin/nologin
lxd:x:998:100:./var/snap/lxd/common/lxd:/bin/false
test1:x:1002:1003:./home/test1:/bin/sh
fwupd-refresh:x:122:132:fwupd-refresh user,,:/run/systemd:/usr/sbin/nologin
farzanrahmani_99521271@DESKTOP-955QSI1: $ awk -F ":" '$1 ~ /^s/ { print $1 }' /etc/passwd
sys
sync
systemd-network
systemd-resolve
systemd-timesync
syslog
sshd
saned
systemd-coredump
farzanrahmani_99521271@DESKTOP-955QSI1: $ awk -F ":" '$1 ~ /^s/ { print $1 }' /etc/passwd | wc
9      9      93
farzanrahmani_99521271@DESKTOP-955QSI1: $ awk -F ":" '$1 ~ /^s/ { print $1 }' /etc/passwd | wc -c
93
farzanrahmani_99521271@DESKTOP-955QSI1: $

```

```

farzanrahmani_99521271@DESKTOP-955QSI1: ~/Desktop$
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ ls -l
total 20
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 Feb 26 21:16 Farzan
drwxrwxr-- 2 farzanrahmani_99521271 adm 4096 Feb 26 21:16 OS_lab
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 10 Mar 1 13:56 open_farzan.txt
-rwxrwxrwx 1 root root 1632 Jun 7 10:29 shadow
drwxrwxr-x 3 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 9 10:56 shell_script
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ echo "hostname > Host.txt" | at now + 2 minutes
warning: commands will be executed using /bin/sh
job 10 at Wed Jun 7 10:50:00 2023
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$ ls -l
total 24
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 Feb 26 21:16 Farzan
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 45 Jun 7 10:50 Host.txt.gz
drwxrwxr-- 2 farzanrahmani_99521271 adm 4096 Feb 26 21:16 OS_lab
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 10 Mar 1 13:56 open_farzan.txt
-rwxrwxrwx 1 root root 1632 Jun 7 10:29 shadow
drwxrwxr-x 3 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 9 10:56 shell_script
farzanrahmani_99521271@DESKTOP-955QSI1:~/Desktop$

```

می توان از یکی از دستور های زیر استفاده کنیم:

```
ls -l | grep .txt | awk ' $9 ~ /^[s-z]/ { print $9 }'
```

```
find ~/ -type f -name "*.txt" | grep "[s-z]"
```

```

farzanrahmani_99521271@DESKTOP-955QSI1: ~$ ls -l
total 60
drwxrwxr-x 5 farzanrahmani_99521271 farzanrahmani_99521271 4096 Jun  7 10:50 Desktop
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 23 15:13 hw9
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:47 a.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 169 Apr  5 13:53 badlogins.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  23 May 24 15:42 f2.c
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 114 Mar  4 00:11 grade.txt
drwxr-xr-x 2 root root 4096 May 24 15:48 hw10
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 May  9 10:49 hw7
drwxrwxr-x 2 farzanrahmani_99521271 farzanrahmani_99521271 4096 May 16 22:29 hw8
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  44 Apr  5 13:55 myfile.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 981 May  1 23:42 people
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:48 q.txt
-rw-rw-r-- 1 root root 230 Jun  7 11:06 q5.sh
-rw-rw-r-- 1 root root 477 Jun  7 11:40 q6.sh
-rw-rw-r-- 1 root root 232 Jun  7 11:12 q8.sh
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:48 s.txt
drwxr-xr-x 2 root root 4096 Jun  6 14:58 samq
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  20 May  2 00:15 test.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:47 z.txt
farzanrahmani_99521271@DESKTOP-955QSI1: ~$ ls -l | grep .txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:47 a.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 169 Apr  5 13:53 badlogins.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271 114 Mar  4 00:11 grade.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  44 Apr  5 13:55 myfile.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:48 q.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:48 s.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  20 May  2 00:15 test.txt
-rw-rw-r-- 1 farzanrahmani_99521271 farzanrahmani_99521271  0 Jun  7 11:47 z.txt
farzanrahmani_99521271@DESKTOP-955QSI1: ~$ ls -l | grep .txt | awk ' $9 ~ /^[s-z]/ { print $9 }'
s.txt
test.txt
z.txt
farzanrahmani_99521271@DESKTOP-955QSI1: ~$ find ~/ -type f -name "*.txt" | grep "[s-z]"
/home/farzanrahmani_99521271/test.txt
/home/farzanrahmani_99521271/z.txt
/home/farzanrahmani_99521271/s.txt
farzanrahmani_99521271@DESKTOP-955QSI1: ~$

```

```
#!/bin/bash

read -p "Enter your number? " num

for (( i = 0; i < num; i++ )) do
    echo -n " _"
done
echo " "

for (( j = num; j > 0; j-- )) do
    for (( i = 0; i < j; i++ )) do
        echo -n "|_"
    done
    echo "| "
done
```

```
$ q5.sh
1  #!/bin/bash
2
3  read -p "Enter your number? " num
4
5
6  for (( i = 0; i < num; i++ )) do
7  |    echo -n " _"
8  done
9  echo " "
10
11 for (( j = num; j > 0; j-- )) do
12 |   for (( i = 0; i < j; i++ )) do
13 |       echo -n "|_"
14 |   done
15 |   echo "| "
16 done
17
```


[illegible]

```
#!/bin/bash

echo -n "Enter the MAC address of the interface: "
read mac_address

# Get interface name based on MAC address
interface_name=$(ip -o link | awk -v mac="$mac_address" '$17==mac {print $2}' |
awk -F':' '{print $2}')

# Get IP address based on interface name
ip_address=$(ip -o -4 addr show dev $interface_name | awk '{split($4, a, "/");
print a[1]}')

# Print the IP address and interface name
echo "IP Address: $ip_address"
echo "Interface Name: $interface_name"
```

```
$ q6.sh > ...
1  #!/bin/bash
2
3  echo -n "Enter the MAC address of the interface: "
4  read mac_address
5
6  # Get interface name based on MAC address
7  interface_name=$(ip -o link | awk -v mac="$mac_address" '$17==mac {print $2}' | awk -F':' '{print $2}')
8
9  # Get IP address based on interface name
10 ip_address=$(ip -o -4 addr show dev $interface_name | awk '{split($4, a, "/"); print a[1]}')
11
12 # Print the IP address and interface name
13 echo "IP Address: $ip_address"
14 echo "Interface Name: $interface_name"
15
```

```

farzanrahmani_99521271@DESKTOP-955QSI1:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1280
    inet 172.25.100.162 netmask 255.255.240.0 broadcast 172.25.111.255
    inet6 fe80::215:5dff:feal:3d44 prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:a1:3d:44 txqueuelen 1000 (Ethernet)
    RX packets 1535 bytes 334418 (334.4 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 15 bytes 1032 (1.0 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 33734 bytes 16636573 (16.6 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33734 bytes 16636573 (16.6 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

farzanrahmani_99521271@DESKTOP-955QSI1:~$ ip -o link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000\    link/loopback 00:00:00:00:00:00 brd
00:00:00:00:00:00
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1280 qdisc mq state UP mode DEFAULT group default qlen 1000\    link/ether 00:15:5d:a1:3d:44 brd
ff:ff:ff:ff:ff:ff
farzanrahmani_99521271@DESKTOP-955QSI1:~$ ip -o -4 addr show dev eth0
2: eth0    inet 172.25.100.162/20 brd 172.25.111.255 scope global eth0\    valid_lft forever preferred_lft forever
farzanrahmani_99521271@DESKTOP-955QSI1:~$ bash q6.sh
Enter the MAC address of the interface: 00:15:5d:a1:3d:44
IP Address: 172.25.100.162
Interface Name: eth0
farzanrahmani_99521271@DESKTOP-955QSI1:~$

```

```

    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 33734 bytes 16636573 (16.6 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33734 bytes 16636573 (16.6 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

farzanrahmani_99521271@DESKTOP-955QSI1:~$ ip -o link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000\    link/loopback 00:00:00:00:00:00 brd
00:00:00:00:00:00
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1280 qdisc mq state UP mode DEFAULT group default qlen 1000\    link/ether 00:15:5d:a1:3d:44 brd
ff:ff:ff:ff:ff:ff
farzanrahmani_99521271@DESKTOP-955QSI1:~$ ip -o -4 addr show dev eth0
2: eth0    inet 172.25.100.162/20 brd 172.25.111.255 scope global eth0\    valid_lft forever preferred_lft forever
farzanrahmani_99521271@DESKTOP-955QSI1:~$ bash q6.sh
Enter the MAC address of the interface: 00:15:5d:a1:3d:44
IP Address: 172.25.100.162
Interface Name: eth0
farzanrahmani_99521271@DESKTOP-955QSI1:~$ cat q6.sh
#!/bin/bash

echo -n "Enter the MAC address of the interface: "
read mac_address

# Get interface name based on MAC address
interface_name=$(ip -o link | awk -v mac="$mac_address" '$17==mac {print $2}' | awk -F':' '{print $2}')

# Get IP address based on interface name
ip_address=$(ip -o -4 addr show dev $interface_name | awk '{split($4, a, "/"); print a[1]}')

# Print the IP address and interface name
echo "IP Address: $ip_address"
echo "Interface Name: $interface_name"

farzanrahmani_99521271@DESKTOP-955QSI1:~$

```


همچنین می توانستیم برای حل این سوال از کد زیر هم استفاده کنیم:

```
echo "Enter the interface MAC address: "
read mac

if [[ $mac =~ ^([0-9A-Fa-f]{2}[:-]){5}([0-9A-Fa-f]{2})$ ]]; then
    echo "Valid MAC address"
else
    echo "Invalid MAC address"
fi

interface=$(grep -i $mac /sys/class/net/*/address | cut -d/ -f5)

ip=$(ip addr show $interface | grep -Po 'inet \K[\d.]+')

echo "IP address of $interface is $ip"

echo "Interface name is $interface"
```

از دستور زیر استفاده می کنیم:

```
awk -F ":" ' $7 = "/bin/bash" { print $3 }' /etc/passwd
```

```

farzanrahmani_99521271@DESKTOP-955QSI1: $ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin)/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106:/:nonexistent:/usr/sbin/nologin
syslog:x:104:110:/home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,:/var/lib/tpm:/bin/false
uuidd:x:107:112:./run/uuidd:/usr/sbin/nologin
tcpdump:x:108:113:./nonexistent:/usr/sbin/nologin
sshd:x:109:65534:./run/sshd:/usr/sbin/nologin
landscape:x:110:115:./var/lib/landscape:/usr/sbin/nologin
pollinate:x:111:1:./var/cache/pollinate:/bin/false
farzan_rahmani:x:1000:1000,,,:/home/farzan_rahmani:/bin/bash
rtkit:x:112:120:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:113:122:user for cups-pk-helper service,,:/home/cups-pk-helper:/usr/sbin/nologin
geoclue:x:114:123:./var/lib/geoclue:/usr/sbin/nologin

```

```

systemd-coredump:x:999:999:systemd Core Dumper:/usr/sbin/nologin
lxd:x:998:100:./var/snap/lxd/common/lxd:/bin/false
test1:x:1002:1003:./home/test1:/bin/sh
fwupd-refresh:x:122:132:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
farzanrahmani_99521271@DESKTOP-955QSI1: $ awk -F ":" ' $7 = "/bin/bash" { print $3 }' /etc/passwd
0
1
2
3
4
5
6
7
8
9
10
13
33
34
38
39
41
65534
100
101
102
103
104
105
106
107
108
109
110
111

```

```
34
38
39
41
65534
100
101
102
103
104
105
106
107
108
109
110
111
1000
112
113
114
115
116
117
118
119
120
121
1001
999
998
1002
122
farzanrahmani_99521271@DESKTOP-955QSI1: $
```


```

read -p "enter 4-digit number? " num

sum=0
while [ $num -gt 0 ]
do
    let remainder=num%10
    if (( remainder % 2 == 0 )); then
        let sum=sum+remainder
    fi
    let num=num/10
done
echo -n "The sum of even digits is : "
echo $sum

```

```

$ q8.sh > ...
1  read -p "enter 4-digit number? " num
2
3  sum=0
4  while [ $num -gt 0 ]
5  do
6      let remainder=num%10
7      if (( remainder % 2 == 0 )); then
8          let sum=sum+remainder
9      fi
10  let num=num/10
11 done
12 echo -n "The sum of even digits is : "
13 echo $sum
14

```

```
farzanrahmani_99521271@DESKTOP-955QSI1:~$  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ ls  
Desktop HW9 badlogins.txt f2.c grade.txt hw10 hw7 hw8 myfile.txt people q5.sh q8.sh samq test.txt  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ cat q8.sh  
read -p "enter 4-digit number? " num  
  
sum=0  
while [ $num -gt 0 ]  
do  
    let remainder=num%10  
    if (( remainder % 2 == 0 )); then  
        let sum=sum+remainder  
    fi  
    let num=num/10  
done  
echo -n "The sum of even digits is : "  
echo $sum  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ bash ./q8.sh  
enter 4-digit number? 1234  
The sum of even digits is : 6  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ bash ./q8.sh  
enter 4-digit number? 4682  
The sum of even digits is : 20  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ bash ./q8.sh  
enter 4-digit number? 1976  
The sum of even digits is : 6  
farzanrahmani_99521271@DESKTOP-955QSI1:~$ █
```

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