EPAM University Programs
DevOps external course
Module 4 Linux Essentials with Bash
TASK 4.11

4.11.1 Найти и вывести пути до файлов из каталога /usr (включая подкаталоги), размер которых больше 20 Мб.

```
find /usr -size +20000k
```

```
bobrov@bobrov-VirtualBox:~$ find /usr -size +20000k
/usr/share/fonts/opentype/noto/NotoSerifCJK-Bold.ttc
/usr/share/fonts/opentype/noto/NotoSerifCJK-Regular.ttc
/usr/share/fonts/opentype/noto/NotoSansCJK-Bold.ttc
/usr/lib/chromium-browser/chromium-browser
/usr/lib/firefox/omni.ja
/usr/lib/firefox/libxul.so
/usr/lib/firefox/browser/omni.ja
/usr/lib/gcc/x86_64-linux-gnu/7/cc1
/usr/lib/x86_64-linux-gnu/libwebkit2gtk-4.0.so.37.44.4
/usr/lib/x86_64-linux-gnu/libLLVM-6.0.so.1
/usr/lib/x86_64-linux-gnu/libmozjs-52.so.0.0.0
/usr/lib/x86_64-linux-gnu/libicudata.so.60.2
/usr/lib/x86_64-linux-gnu/libLLVM-9.so.1
/usr/lib/x86_64-linux-gnu/libjavascriptcoregtk-4.0.so.18.16.5
```

4.11.2 Подсчитать количество файлов, количество скрытых файлов в домашнем каталоге текущего пользователя и вывести результат в формате:

```
Домашний каталог пользователя
<User>
содержит обычных файлов:
XX
скрытых файлов:
YY
```

```
#!/bin/bash
echo "User's home directory"
echo "<$USER>"
echo "Contains regular files:"
find ~ -type f \! -name ".*" | wc -l
echo "Hidden files:"
find ~ -type f -name ".*" | wc -l
```

```
bobrov@bobrov-VirtualBox:~/Documents/homework411$ ./scr4112
User's home directory
<bobrov>
Contains regular files:
959
Hidden files:
18
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

Only in home directory without subdirectories.

```bash
#!/bin/bash
echo "User's home directory"
echo "<$USER>"
echo "Contains regular files:"
find ~ -maxdepth 1 -type f \! -name ".*" | wc -l
echo "Hidden files:"
find ~ -maxdepth 1 -type f -name ".*" | wc -l
```

```
bobrov@bobrov-VirtualBox:~/Documents/homework411$ ./scr4112a
User's home directory
<bobrov>
Contains regular files:
0
Hidden files:
13
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

4.11.3 Вывести на экран дату, время, список зарегистрировавшихся пользователей, uptime системы.

```bash
#!/bin/bash
# date in usefull view %d/%b/%Y
echo $(date +"%d/%b/%Y";uptime|awk '{print $1,$2,$3}'|sed 's/,//')

# user ID 65534 - nobody user
# users with ID < 1000 - system users
awk -F: '{if ($3>=1000 && $3<65534) print $1}' /etc/passwd
```

```
bobrov@bobrov-VirtualBox:~/Documents/homework411$ ./scr4113
09/May/2020 18:33:40 up 3:06
bobrov
utest
guest
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

4.11.4 Вывести количество процессов, запущенных от имени текущего и от имени пользователя root в формате:

Процессов пользователя:

<User>

XX

Процессов пользователя root:

YY

```
#!/bin/bash
echo "User's processes:"
echo "<$USER>"
#Display list processes of the user $USER, delete title, count strings
ps -u $USER | sed '1d' | wc -l
echo "root user processes:"
#Display list processes of the root user, delete title, count strings
ps -u root | sed '1d' | wc -l
```

```
bobrov@bobrov-VirtualBox:~/Documents/homework411$ ./scr4114
User's processes:
<bobrov>
79
root user processes:
107
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

4.11.5 Найти и вывести 5 процессов, потребляющих больше всего памяти в системе.

```
#!/bin/bash
ps -eo euser,pid,ppid,cmd,%cpu,%mem,rss --sort=-%mem | head -n 6
```

```
bobrov@bobrov-VirtualBox:~/Documents/homework411$ ./scr4115
EUSER     PID  PPID CMD                        %CPU %MEM   RSS
bobrov   2664  2491 /usr/bin/gnome-shell        0.1  6.6 266240
gdm      1397  1373 /usr/bin/gnome-shell        0.0  5.2 212236
bobrov   3118  2491 /usr/bin/gnome-software --g 0.0  3.3 135800
bobrov   2480  2478 /usr/lib/xorg/Xorg vt2 -dis 0.0  1.8 75640
bobrov   3021  2206 /usr/lib/evolution/evolutio 0.0  1.6 66768
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

4.11.6 Разработать сценарий, который вызывает команду grep и принимает следующие аргументы:

- текст, который нужно найти;

- файл, в котором нужно найти этот текст;

- максимальное количество строк, которое нужно вывести на экран.

Вывод команды grep отсортировать и пронумеровать. Сделать для скрипта псевдоним и запустить через псевдоним

```bash
#/bin/bash
clear
echo ------------------------------------------
  read -p "What do you want to find?  " w
echo ------------------------------------------
  read -p "In which file do you need to find it?  " f
echo ------------------------------------------
  read -p "How many strings do you want to see?  " n
echo ------------------------------------------

# main
function func {
grep "$w" "$f" | head -n "$n" | sort | cat -n
}
# check $w
if [[ -z "$w" ]]
then echo "error: You didn't write what do you want to find!"
else echo
fi
# check $f
if [[ -z "$f" ]]
then echo "error: You didn't write the path of the file!"
else echo
fi
# check $n and run main
if ( echo "$n" | grep -E -q "^?[0-9]+$" )
then func
else  echo "error: Not a number in How many strings do you want to see?!"
fi
```

Make alias for our script and run it

```bash
alias gr='/home/bobrov/Documents/homework411/scr4116'
gr
```

```
------------------------------------------
What do you want to find?  usr
------------------------------------------
In which file do you need to find it?  /etc/passwd
------------------------------------------
How many strings do you want to see?  10
------------------------------------------


     1   bin:x:2:2:bin:/bin:/usr/sbin/nologin
     2   daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
     3   games:x:5:60:games:/usr/games:/usr/sbin/nologin
     4   lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
     5   mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
     6   man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
     7   news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
     8   proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
     9   sys:x:3:3:sys:/dev:/usr/sbin/nologin
    10   uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
bobrov@bobrov-VirtualBox:~/Documents/homework411$
```

4.11.7 Запустить 4.11.6 в ограниченном режиме для каталога /home/user

```
#/bin/bash
clear
echo "  Change the directory"
cd /home/"$USER"
echo "  You are in `pwd`"
echo
set -r
echo " ====>Switch to restricted mode<===="
echo
  read -p "     What do you want to find? " w
echo
  read -p "     In which file do you need to find it? " f
echo
  read -p "     How many strings do you want to see? " n
echo
# main
function func {
grep "$w" "$f" | head -n "$n" | sort | cat -n
}
# check $w
if [[ -z "$w" ]]
then echo "error: You didn't write what do you want to find!"
else echo
fi
```

```
# check $f
if [[ -z "$f" ]]
then echo "error: You didn't write the path of the file!"
else echo
fi
# check $n and run main
if ( echo "$n" | grep -E -q "^?[0-9]+$" )
then func
else  echo "error: Not a number in How many strings do you want to see?!"
fi
```

```
        Change the directory
        You are in /home/bobrov

 ====>Switch to restricted mode<====

        What do you want to find? man

        In which file do you need to find it? /etc/passwd

        How many strings do you want to see? 5



    1   colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
    2   man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
bobrov@bobrov-VirtualBox:~/Documents/homework411$ 
```