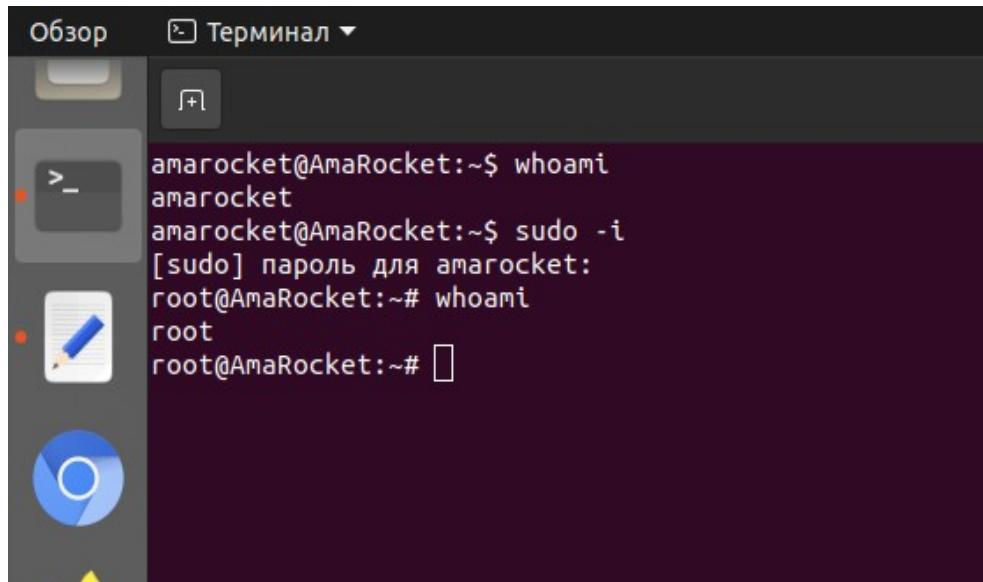


## Task1.Part1

### 1) Log in to the system as root

```
$ sudo -i
```

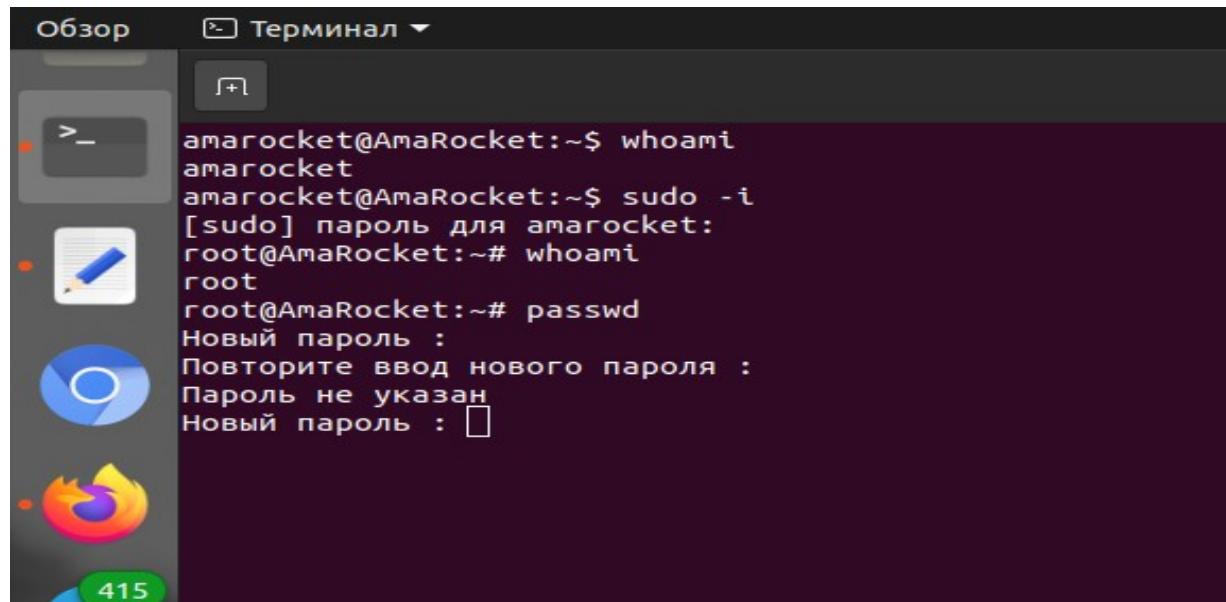
Check: \$ whoami



```
Обзор Терминал ▾
amarocket@AmaRocket:~$ whoami
amarocket
amarocket@AmaRocket:~$ sudo -i
[sudo] пароль для амарокет:
root@AmaRocket:~# whoami
root
root@AmaRocket:~#
```

### 2) Use the passwd command to change the password. Examine the basic parameters of the command. What system file does it change \*?

```
$ passwd
```



```
Обзор Терминал ▾
amarocket@AmaRocket:~$ whoami
amarocket
amarocket@AmaRocket:~$ sudo -i
[sudo] пароль для амарокет:
root@AmaRocket:~# whoami
root
root@AmaRocket:~# passwd
Новый пароль :
Повторите ввод нового пароля :
Пароль не указан
Новый пароль :
```

passwd [-k] [-l] [-u [-f]] [-d] [-S] [username]

The meaning of the command options :

-k - Used to update only those passwords that have expired.

-l - blocks the specified user (available only to the administrator). Blocking is performed by adding the !

Prefix to the password.

stdin - accept new password from standard input.

-u - unblock user and remove prefix! (available only to the administrator).

-d - cancel the password for the user (available only to the administrator). Allows the user to log in without

a password and change it themselves.

-n - sets the minimum period in days before changing the password (available only to the administrator).

-x - sets the maximum period in days before changing the password (available only to the administrator).

-w - sets the period in days when the user starts receiving messages about the need to change the password (available only to the administrator).

-i - sets the period in days until the old password is no longer active and the registration record is blocked  
(available only to the administrator).

-S - displays short information about the state of the password (about its validity period). Available only to  
the administrator.

Change sys files as:

/etc/passwd - info about users

/etc/shadow - contain protected info about users

/etc/pam.d/passwd - PAM configuration for passwd

**3) Determine the users registered in the system, as well as what commands they execute. What additional information can be gleaned from the command execution?**

\$ cat/etc/passwd

or

\$sed's/:.\*//'/etc/passwd

and active users in system :

\$ w

```
systemctl start mysql
mysql
amarocket@AmaRocket:~$ w
20:08:22 up 1 day, 17 min, 1 user, load average: 0,76, 0,68, 1,36
USER   TTY     FROM           LOGIN@  IDLE   JCPU   PCPU WHAT
amarocke :0    :0      ?h19  ?xdm?  3:22m  0,00s /usr/lib/gdm3/gdm-x-session --run-script env GNOME_SESSION_MODE=ubuntu /usr/bin/gnome-session --systemd --session=ubuntu
amarocket@AmaRocket:~$
```

```
mysq[...]:998:1001:~/home/mysql:/bin/sh
amarocket@AmaRocket:~$ sed 's/:.*//' /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
systemd-network
systemd-resolve
systemd-timesync
messagebus
syslog
_apt
tss
uuidd
tcpdump
avahi-autoipd
usbmux
rtkit
dnsmasq
cups-pk-helper
speech-dispatcher
avahi
kernoops
saned
nm-openvpn
hplip
whoopsie
colord
geoclue
pulse
gnome-initial-setup
gdm
amarocket
systemd-coredump
mysql
amarocket@AmaRocket:~$ □
```

```
mysq[...]
amarocket@AmaRocket:~$ 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:107:114:/:/run/uuidd:/usr/sbin/nologin
tcpdump:x:108:115:/:/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Ooops Tracking Daemon,,,:/usr/sbin/nologin
saned:x:117:123:/:/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
whoopsie:x:120:125:/:/bin/false
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:122:127:/:/var/lib/geoclue:/usr/sbin/nologin
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:124:65534:/:/run/gnome-initial-setup:/bin/false
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
amarocket:x:1000:1000:AmaRocket,,,:/home/amarocket:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper,:/usr/sbin/nologin
mysql:x:998:1001:/:/home/mysql:/bin/sh
amarocket@AmaRocket:~$ □
```

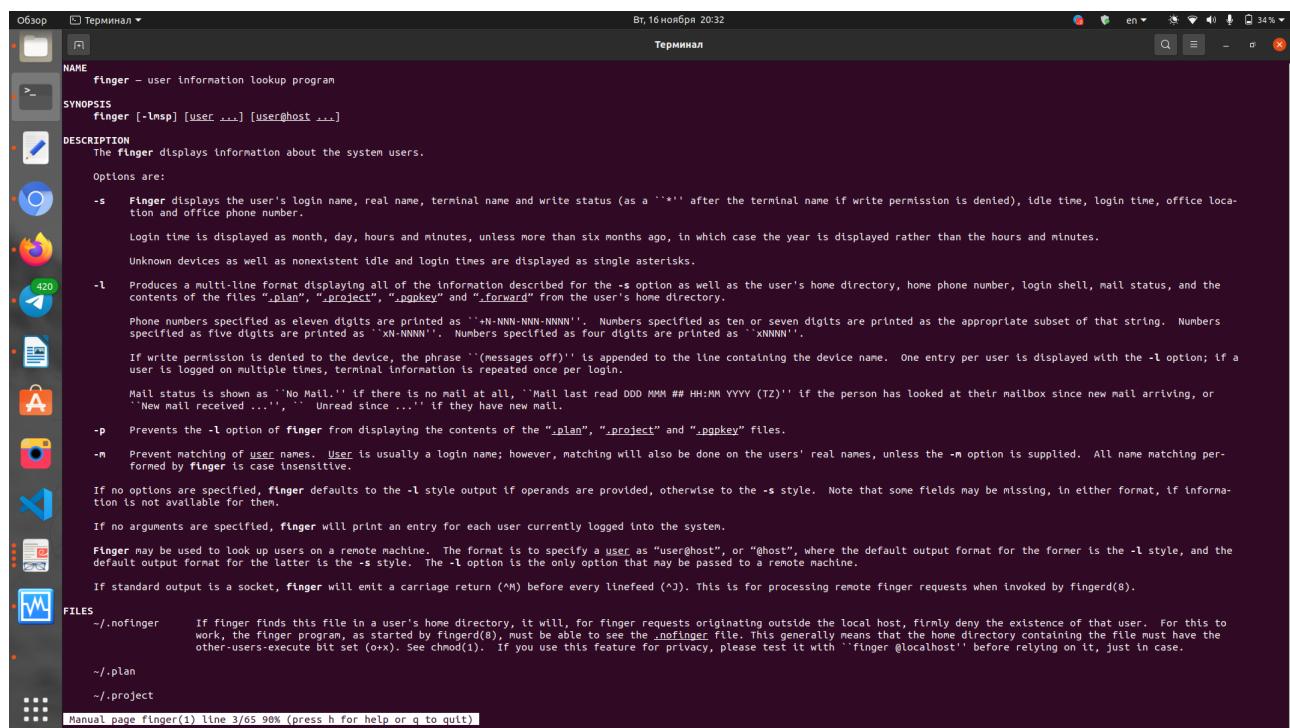
## 4) Change personal information about yourself.

\$ chfn <USERNAME>

```
amagocket@AmaRocket:~$ sudo apt install finger
[sudo] пароль для amagocket:
Чтение списков пакетов... Готово
Построение дерева зависимостей
Чтение информации о состояниях... Готово
Следующие НОВЫЕ пакеты будут установлены:
  finger
Обновлено 0 пакетов, установлено 1 новых пакетов, для удаления отмечено 0 пакетов, и 11 пакетов не обновлено.
Необходимо скачать 16,9 kB архивов.
После данной операции объём занятого дискового пространства возрастёт на 51,2 kB.
Пол:1 http://ua.archive.ubuntu.com/ubuntu focal/universe amd64 finger amd64 0.17-17 [16,9 kB]
Получено 16,9 kB за 0с (128 kB/s)
Выбор ранее не выбранного пакета finger.
(Чтение базы данных ... на данный момент установлено 248280 файлов и каталогов.)
Подготовка к распаковке .../finger_0.17-17_amd64.deb ...
Распаковывается finger (0.17-17) ...
Настраивается пакет finger (0.17-17) ...
Обрабатывается триггеры для man-db (2.9.1-1) ...
amagocket@AmaRocket:~$ finger
Login      Name      Tty      Idle   Login Time   Office   Office Phone
amagocket  AmaRocket *:0          Nov 15 19:50 (:0)
amagocket@AmaRocket:~$ chfn amarocket
Пароль:
Изменение информации о пользователе amarocket
Введите новое значение или нажмите ENTER для выбора значения по умолчанию
  Полное имя: AmaRocket
  Номер комнаты []: 1919
  Рабочий телефон []: +380957736627
  Домашний телефон []: -
amarocket@AmaRocket:~$
```

## 5) Become familiar with the Linux help system and the man and info commands. Get help on the previously discussed commands, define and describe any two keys for these commands. Give examples.

Use command \$ man <command> and \$ info <command>



The screenshot shows a Linux desktop environment with a terminal window open. The terminal title is "Терминал". The content of the terminal is the man page for the "finger" command. The man page includes sections for NAME, SYNOPSIS, DESCRIPTION, Options, and FILES. It provides detailed information about the command's functionality, such as displaying user information, handling options like -s and -l, and specifying files like .plan, .project, and .popkey. The terminal window is part of a desktop interface with other application icons visible in the background.

```
NAME
  finger - user information lookup program
SYNOPSIS
  finger [-lmsp] [user ...] [user@host ...]
DESCRIPTION
  The finger displays information about the system users.

  Options are:
    -s   Finger displays the user's login name, real name, terminal name and write status (as a '*' after the terminal name if write permission is denied), idle time, login time, office location and office phone number.

    Login time is displayed as month, day, hours and minutes, unless more than six months ago, in which case the year is displayed rather than the hours and minutes.

    Unknown devices as well as nonexistent idle and login times are displayed as single asterisks.

    -l   Produces a multi-line format displaying all of the information described for the -s option as well as the user's home directory, home phone number, login shell, mail status, and the contents of the files ".plan", ".project", ".popkey" and ".forward" from the user's home directory.

    Phone numbers specified as eleven digits are printed as "NN-NNN-NNN-NNNN". Numbers specified as ten or seven digits are printed as the appropriate subset of that string. Numbers specified as five digits are printed as "XNNNN". Numbers specified as four digits are printed as "XNNN".

    If write permission is denied to the device, the phrase "(messages off)" is appended to the line containing the device name. One entry per user is displayed with the -l option; if a user is logged on multiple times, terminal information is repeated once per login.

    Mail status is shown as "No Mail.", "Mail last read DDD MMMM ## HH:MM YYYY (TZ)" if the person has looked at their mailbox since new mail arriving, or "New mail received ...", "Unread since ..." if they have new mail.

    -p   Prevents the -l option of finger from displaying the contents of the ".plan", ".project" and ".popkey" files.

    -m   Prevent matching of user names. User is usually a login name; however, matching will also be done on the users' real names, unless the -m option is supplied. All name matching performed by finger is case insensitive.

  If no options are specified, finger defaults to the -l style output if operands are provided, otherwise to the -s style. Note that some fields may be missing, in either format, if information is not available for them.

  If no arguments are specified, finger will print an entry for each user currently logged into the system.

  Finger may be used to look up users on a remote machine. The format is to specify a user as "user@host", or "@host", where the default output format for the former is the -l style, and the default output format for the latter is the -s style. The -l option is the only option that may be passed to a remote machine.

  If standard output is a socket, finger will emit a carriage return (^M) before every linefeed (^J). This is for processing remote finger requests when invoked by fingerd(8).

FILES
  ./nofinger      If finger finds this file in a user's home directory, it will, for finger requests originating outside the local host, firmly deny the existence of that user. For this to work, the finger program, as started by fingerd(8), must be able to see the .nofinger file. This generally means that the home directory containing the file must have the other-users-execute bit set (0+x). See chmod(1). If you use this feature for privacy, please test it with "finger @localhost" before relying on it, just in case.

  ./plan
  ./project
  Manual page finger(1) line 3/65 90% (press h for help or q to quit)
```

**6) Explore the more and less commands using the help system. View the contents of files .bash\* using commands.**

```
amarocket@AmaRocket:~$ more .bash*
:::::::
.bash_history
:::::::
clear
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
clear
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
clear
/bin/python3 /home/amarocket/Console_app/hello.py
clear
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/console_app/expensesSDK.py
/bin/python3 /home/amarocket/console_app/expensesSDK.py
/bin/python3 /home/amarocket/console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/console_app/expense.py
/bin/python3 /home/amarocket/console_app/expense.py
/bin/python3 /home/amarocket/Console_app/hello.py
pip install django
-m pip install --upgrade pip
pip install --upgrade pip
django-admin startproject ExpenseTracker
python mange.py startapp home
python mange.py startapp home
python mange.py startapp home
python mange.py startapp home
pip install django
pip install --upgrade pip
django-admin startproject ExpenseTracker
python manage.py startapp home
cd ExpenseTracker
python manage.py startapp home
python manage.py makemigrations
python manage.py migrate
python manage.py createsuperuser
127.0.0.1:8000
python manage.py runserver
python manage.py runserver
python manage.py runserver
python -m pip install Pillow
python manage.py runserver
python manage.py runserver
python manage.py makemigrations
python manage.py migrate
python manage.py runserver
```

**7) \* Describe in plans that you are working on laboratory work 1. Tip: You should read the documentation for the finger command.**

```
$ touch .plan
$ echo „I work on Lab 1“ > .plan
$ finger -l # check
```

```
amarocket@AmaRocket:~$ pwd
/home/amarocket
amarocket@AmaRocket:~$ ls
cat      Console_app  my-script.sh  snap        softserve_2       Видео      Загрузки     Музыка      'Рабочий стол'
CodeTrash  Django_pet   NIX_Edu      softserve_1  'VirtualBox VMs'  Документы  Изображения  Общедоступные  Шаблоны
amarocket@AmaRocket:~$ echo "I work on Lab 1" > .plan
amarocket@AmaRocket:~$ cat .plan
I work on Lab 1
amarocket@AmaRocket:~$ finger -l
Login: amarocket          Name: AmaRocket
Directory: /home/amarocket    Shell: /bin/bash
Office: 1919, +380957736627  Home Phone: -
On since Mon Nov 15 19:50 (EET) on :0 from :0 (messages off)
No mail.
Plan:
I work on Lab 1
amarocket@AmaRocket:~$
```

**8) \* List the contents of the home directory using the ls command, define its files and directories. Hint: Use the help system to familiarize yourself with the ls command.**

```
$ pwd  
$ ls -la
```

```
amarocket@AmaRocket:~$ ls -la  
итого 1000  
drwxr-xr-x 33 amarocket amarocket 4096 ноя 16 20:59 .  
drwxr-xr-x 3 root root 4096 июн 29 2020 ..  
drwxrwxr-x 9 amarocket amarocket 4096 окт 31 15:11 .atom  
-rw----- 1 amarocket amarocket 12961 ноя 16 19:58 .bash_history  
-rw-rw-r-- 1 amarocket amarocket 200 янв 7 2021 .bash_profile  
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .bashrc  
drwxr-xr-x 30 amarocket amarocket 4096 ноя 15 12:58 .cache  
-rw----- 1 amarocket amarocket 18 янв 23 2021 .calc_history  
-rw-rw-r-- 1 amarocket amarocket 22 ноя 16 20:56 cat  
drwxrwxr-x 3 amarocket amarocket 4096 ноя 13 20:19 CodeTrash  
drwxr---- 31 amarocket amarocket 4096 ноя 16 11:36 .config  
drwxrwxr-x 7 amarocket amarocket 4096 ноя 13 20:11 Console_app  
drwxrwxr-x 6 amarocket amarocket 4096 окт 27 16:33 Django_pet  
drwxrwxr-x 8 amarocket amarocket 4096 сен 9 2020 .git  
-rw-rw-r-- 1 amarocket amarocket 59 окт 27 19:40 .gitconfig  
-rw-rw-r-- 1 amarocket amarocket 791166 окт 26 14:46 .gitignore  
drwxr---- 4 amarocket amarocket 4096 янв 7 2021 .gnupg  
drwxr-xr-x 5 amarocket amarocket 4096 окт 28 12:37 .ipython  
-rw----- 1 amarocket amarocket 0 янв 13 2021 .irb-history  
drwxrwxr-x 4 amarocket amarocket 4096 июн 29 2020 .java  
-rw-rw-r-- 1 amarocket amarocket 0 окт 27 19:32 .lesshsQ  
drwxr-xr-x 7 amarocket amarocket 4096 ноя 6 14:57 .local  
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .mkshrc  
drwxr---- 5 amarocket amarocket 4096 июн 29 2020 .mozilla  
-rw-rx-r-x 1 amarocket amarocket 27 ноя 2 12:02 my-script.sh  
drwxrwxr-x 2 amarocket amarocket 4096 ноя 16 16:00 NIX_Edu  
drwxr---- 3 amarocket amarocket 4096 апр 28 2021 .pk1  
-rw-rw-r-- 1 amarocket amarocket 16 ноя 16 20:59 .plan  
drwxr---- 2 amarocket amarocket 4096 ноя 16 00:47 .putty  
-rw----- 1 amarocket amarocket 659 ноя 3 19:28 .python_history  
-rw----- 1 amarocket amarocket 0 окт 27 17:43 .python_history-07946.tmp  
-rw-rw-r-- 1 amarocket amarocket 1553 ноя 29 2020 .recently-used  
drwxrwxr-x 25 amarocket amarocket 4096 янв 7 2021 .rvm  
drwxr---- 11 amarocket amarocket 4096 ноя 16 00:36 snap  
-rw-rw-r-- 1 amarocket amarocket 3790 ноя 7 12:13 softserve_1  
-rw-rw-r-- 1 amarocket amarocket 866 ноя 7 12:12 softserve_2  
drwxr---- 2 amarocket amarocket 4096 ноя 2 12:11 .ssh  
-rw-r----- 1 amarocket amarocket 0 июн 29 2020 .sudo_as_admin_successful  
drwxrwxr-x 3 amarocket amarocket 4096 ноя 29 2020 .templateengine  
drwxr---- 6 amarocket amarocket 4096 окт 23 2020 .thunderbird  
-rw----- 1 amarocket amarocket 2184 ноя 2 11:40 .viminfo  
drwxrwxr-x 4 amarocket amarocket 4096 ноя 15 20:01 'VirtualBox VMs'  
lrwxrwxrwx 1 amarocket amarocket 4096 ноя 12 18:32 .virtualenvs -> /home/amarocket/.local/share/virtualenvs  
drwxrwxr-x 3 amarocket amarocket 4096 апр 28 2021 .vscode  
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .zlogin  
drwxr---- 8 amarocket amarocket 4096 ноя 16 11:36 .zoom  
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .zshrc  
drwxr-xr-x 2 amarocket amarocket 4096 июн 30 2020 Видео  
drwxr-xr-x 2 amarocket amarocket 4096 июн 30 2020 Документы  
drwxr---- 3 amarocket amarocket 4096 ноя 16 00:26 Загрузки  
drwxr-xr-x 4 amarocket amarocket 20480 ноя 16 21:00 Изображения  
drwxr-xr-x 2 amarocket amarocket 4096 июн 30 2020 Музыка  
drwxr-xr-x 2 amarocket amarocket 4096 июн 30 2020 Общедоступные  
drwxr-xr-x 5 amarocket amarocket 4096 час 15 12:24 'Рабочий стол'
```

## Task1.Part2

1) Examine the tree command. Master the technique of applying a template, for example, display all files that contain a character c, or files that contain a specific sequence of characters. List subdirectories of the root directory up to and including the second nesting level.

```
$ tree -L 2
```

```
Терминал
amarocket@AmaRocket:~$ tree -L 2
.
├── cat
│   ├── CodeTrash
│   │   ├── CodeTrash
│   │   ├── nano_func.txt
│   │   ├── pars.py
│   │   ├── Pipfile
│   │   ├── Pipfile.lock
│   │   ├── Python class
│   │   ├── Python tasks
│   │   └── Vintage
└── Console_app
    ├── base.db
    ├── expense.py
    ├── expenses.db
    ├── expensesSDK.py
    ├── hello.py
    ├── Install
    ├── __pycache__
    ├── ReadMe
    └── README.md
```

2) What command can be used to determine the type of file (for example, text or binary)? Give an example.

```
$ file <name-file>
```

```
Шаблоны
37 directories, 211 files
amarocket@AmaRocket:~$ cd Console_app
amarocket@AmaRocket:~/Console_app$ file base.db
base.db: SQLite 3.x database, last written using SQLite version 3031001
amarocket@AmaRocket:~/Console_app$
```

### 3) Master the skills of navigating the file system using relative and absolute paths.

How can you go back to your home directory from anywhere in the filesystem?

```
$ cd <way/to/directory>
$ ~/<name_of_file>
$ cd
```

### 4) Become familiar with the various options for the ls command. Give examples of listing directories using different keys. Explain the information displayed on the terminal using the -l and -a switches.

```
$ ls      - show files in directory
$ ls -a   - show all files (with hidden) in directory
$ ls -l   - show detailing list (user, group, date, size, funcs (rwr) etc)
```

```
amarocket@AmaRocket:~/Django_pet/venv/bin$ ls
activate  activate.fish  activate_this.py  django-admin  pip  pip3.8    python  python3.8  wheel  wheel-3.8
activate.csh  activate.ps1  activate.xsh  django-admin.py  pip3  __pycache__  python3  sqlformat  wheel3  wheel3.8
amarocket@AmaRocket:~/Django_pet/venv/bin$ ls -a
.  activate  activate.fish  activate_this.py  django-admin  pip  pip3.8    python  python3.8  wheel  wheel-3.8
..  activate.csh  activate.ps1  activate.xsh  django-admin.py  pip3  __pycache__  python3  sqlformat  wheel3  wheel3.8
amarocket@AmaRocket:~/Django_pet/venv/bin$ ls -l
total 68
-rw-rw-r-- 1 amarocket amarocket 2147 okt 27 12:43 activate
-rw-rw-r-- 1 amarocket amarocket 1439 okt 27 12:43 activate.csh
-rw-rw-r-- 1 amarocket amarocket 3070 okt 27 12:43 activate.fish
-rw-rw-r-- 1 amarocket amarocket 1751 okt 27 12:43 activate.ps1
-rw-rw-r-- 1 amarocket amarocket 1199 okt 27 12:43 activate_this.py
-rw-rw-r-- 1 amarocket amarocket 1161 okt 27 12:43 activate.xsh
-rwxrwxr-x 1 amarocket amarocket 289 okt 27 12:44 django-admin
-rwxrwxr-x 1 amarocket amarocket 679 okt 27 12:44 django-admin.py
-rwxrwxr-x 1 amarocket amarocket 247 okt 27 12:44 pip
-rwxrwxr-x 1 amarocket amarocket 247 okt 27 12:44 pip3
-rwxrwxr-x 1 amarocket amarocket 247 okt 27 12:44 pip3.8
drwxrwxr-x 2 amarocket amarocket 4096 okt 27 12:44 __pycache__
lrwxrwxrwx 1 amarocket amarocket 18 okt 27 12:43 python -> /usr/bin/python3.8
lrwxrwxrwx 1 amarocket amarocket 6 okt 27 12:43 python3 -> python
lrwxrwxrwx 1 amarocket amarocket 6 okt 27 12:43 python3.8 -> python
-rwxrwxr-x 1 amarocket amarocket 242 okt 27 12:44 sqlformat
-rwxrwxr-x 1 amarocket amarocket 234 okt 27 12:43 wheel
-rwxrwxr-x 1 amarocket amarocket 234 okt 27 12:43 wheel3
-rwxrwxr-x 1 amarocket amarocket 234 okt 27 12:43 wheel-3.8
-rwxrwxr-x 1 amarocket amarocket 234 okt 27 12:43 wheel3.8
amarocket@AmaRocket:~/Django_pet/venv/bin$ 
```

### 5) Perform the following sequence of operations:

- create a subdirectory in the home directory;
- in this subdirectory create a file containing information about directories located in the root directory (using I/O redirection operations);
- view the created file;
- copy the created file to your home directory using relative and absolute addressing.
- delete the previously created subdirectory with the file requesting removal;
- delete the file copied to the home directory.

```

amarocket@AmaRocket:~$ mkdir test_dir
amarocket@AmaRocket:~$ cd test_dir
amarocket@AmaRocket:~/test_dir$ touch test.txt
amarocket@AmaRocket:~/test_dir$ cd ..
amarocket@AmaRocket:~$ ls -la test_dir/test.txt
-rw-rw-r-- 1 amarocket amarocket 0 ноя 16 22:59 test_dir/test.txt
amarocket@AmaRocket:~$ ls -la >> test_dir/test.txt
amarocket@AmaRocket:~$ cat test_dir/test.txt
Итого 1004
drwxr-xr-x 34 amarocket amarocket 4096 ноя 16 22:57 .
drwxr-xr-x 3 root root 4096 июн 29 2020 ..
drwxrwxr-x 9 amarocket amarocket 4096 окт 31 15:11 .atom
-rw----- 1 amarocket amarocket 12961 ноя 16 19:58 .bash_history
-rw-rw-r-- 1 amarocket amarocket 200 янв 7 2021 .bash_profile
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .bashrc
drwxr-xr-x 30 amarocket amarocket 4096 ноя 15 12:58 .cache
-rw----- 1 amarocket amarocket 18 янв 23 2021 .calc_history
-rw-rw-r-- 1 amarocket amarocket 22 ноя 16 20:56 cat
drwxrwxr-x 3 amarocket amarocket 4096 ноя 13 20:19 CodeTrash
drwx----- 31 amarocket amarocket 4096 ноя 16 11:36 .config
drwxrwxr-x 7 amarocket amarocket 4096 ноя 13 20:11 Console_app
drwxrwxr-x 6 amarocket amarocket 4096 окт 27 16:33 Django_pet
drwxrwxr-x 8 amarocket amarocket 4096 сен 9 2020 .git
-rw-rw-r-- 1 amarocket amarocket 59 окт 27 19:40 .gitconfig
-rw-rw-r-- 1 amarocket amarocket 791166 окт 26 14:46 .gitignore
drwx----- 4 amarocket amarocket 4096 янв 7 2021 .gnupg
drwxr-xr-x 5 amarocket amarocket 4096 окт 28 12:37 .ipython
-rw----- 1 amarocket amarocket 0 янв 13 2021 .irb-history
drwxrwxr-x 4 amarocket amarocket 4096 июн 29 2020 .java
-rw-rw-r-- 1 amarocket amarocket 0 окт 27 19:32 .lessshQ
drwxr-xr-x 7 amarocket amarocket 4096 ноя 6 14:57 .local
-rw-rw-r-- 1 amarocket amarocket 118 янв 7 2021 .mkshrc
drwx----- 5 amarocket amarocket 4096 июн 29 2020 .mozilla
-rw-rw-r-- 1 amarocket amarocket 27 ноя 2 12:02 my-script.sh
drwxrwxr-x 2 amarocket amarocket 4096 ноя 16 16:00 NIX_Edu
drwx----- 3 amarocket amarocket 4096 апр 28 2021 .pkl
-rw-rw-r-- 1 amarocket amarocket 16 ноя 16 20:59 .plan
drwx----- 2 amarocket amarocket 4096 ноя 16 00:47 .putty
-rw----- 1 amarocket amarocket 659 ноя 3 19:28 .python_history
-rw----- 1 amarocket amarocket 0 окт 27 17:43 .python_history-07946.tmp
-rw-rw-r-- 1 amarocket amarocket 1553 ноя 29 2020 .recently-used
drwxrwxr-x 25 amarocket amarocket 4096 янв 7 2021 .rvm
drwx----- 11 amarocket amarocket 4096 ноя 16 00:36 snap
-rw-rw-r-- 1 amarocket amarocket 3790 ноя 7 12:13 softserve_1
-rw-rw-r-- 1 amarocket amarocket 866 ноя 7 12:12 softserve_2
drwx----- 2 amarocket amarocket 4096 ноя 2 12:11 .ssh
-rw-r----- 1 amarocket amarocket 0 июн 29 2020 .sudo_as_admin_successful
drwxrwxr-x 3 amarocket amarocket 4096 ноя 29 2020 .templateengine
drwxrwxr-x 2 amarocket amarocket 4096 ноя 16 22:59 test_dir
drwx----- 6 amarocket amarocket 4096 окт 23 2020 .thunderbird
-rw----- 1 amarocket amarocket 2184 ноя 2 11:40 .viminfo
drwxrwxr-x 4 amarocket amarocket 4096 ноя 15 20:01 VirtualBox VMs
lrwxrwxrwx 1 amarocket amarocket 40 ноя 12 18:32 .virtualenvs -> /home/amarocket/.local/share/virtualenvs
drwxrwxr-x 2 amarocket amarocket 4096 дек 29 2021 .vscodes

```

### Terminal

```

amarocket@AmaRocket:~$ cp test_dir/test.txt ~/test_copy
amarocket@AmaRocket:~$ rm -r test_dir
amarocket@AmaRocket:~$ rm test_copy
amarocket@AmaRocket:~$ 

```

## 6) Perform the following sequence of operations:

- create a subdirectory **test** in the **home** directory;
- copy the **.bash\_history** file to this directory while changing its name to **labwork2**;
- create a hard and soft link to the **labwork2** file in the **test** subdirectory;
- how to define soft and hard link, what do these concepts;
- change the data by opening a symbolic link. What changes will happen and why
- rename the hard link file to **hard\_lnk\_labwork2**;
- rename the soft link file to **symb\_lnk\_labwork2** file;
- then delete the **labwork2**. What changes have occurred and why?

```

amarocket@AmaRocket:~$ mkdir test
amarocket@AmaRocket:~$ cp ~/.bash_history ~/test/labwork2
amarocket@AmaRocket:~$ cd test
amarocket@AmaRocket:~/test$ ls
labwork2
amarocket@AmaRocket:~/test$ ln labwork2 link_on_labwork2
amarocket@AmaRocket:~/test$ ls
labwork2 link_on_labwork2
amarocket@AmaRocket:~/test$ ln -s labwork2 soft_link_on_labwork2
amarocket@AmaRocket:~/test$ ls
labwork2 link_on_labwork2 soft_link_on_labwork2
amarocket@AmaRocket:~/test$ ls -li
итого 32
269976 -rw----- 2 amarocket amarocket 12961 ноя 16 23:22 labwork2
269976 -rw----- 2 amarocket amarocket 12961 ноя 16 23:22 link_on_labwork2
269968 lrwxrwxrwx 1 amarocket amarocket 8 ноя 16 23:36 soft_link_on_labwork2 -> labwork2
amarocket@AmaRocket:~/test$ ls -la >> soft_link_on_labwork2
amarocket@AmaRocket:~/test$ ls
labwork2 link_on_labwork2 soft_link_on_labwork2
amarocket@AmaRocket:~/test$ cat soft_link_on_labwork2
clear

```

```

info passwd
info passwd
итого 40
drwxrwxr-x 2 amarocket amarocket 4096 ноя 16 23:36 .
drwxr-xr-x 35 amarocket amarocket 4096 ноя 16 23:20 ..
-rw----- 2 amarocket amarocket 12961 ноя 16 23:22 labwork2
-rw----- 2 amarocket amarocket 12961 ноя 16 23:22 link_on_labwork2
lrwxrwxrwx 1 amarocket amarocket 8 ноя 16 23:36 soft_link_on_labwork2 -> labwork2
amarocket@AmaRocket:~/test$ ls -s
итого 32
16 labwork2 16 link_on_labwork2 0 soft_link_on_labwork2
amarocket@AmaRocket:~/test$ mv link_on_labwork2 hardlink_labwork2
amarocket@AmaRocket:~/test$ ls
hardlink_labwork2 labwork2 soft_link_on_labwork2
amarocket@AmaRocket:~/test$ mv soft_link_on_labwork2 symblink_labwork2
amarocket@AmaRocket:~/test$ ls
hardlink_labwork2 labwork2 symblink_labwork2
amarocket@AmaRocket:~/test$ rm labwork2
amarocket@AmaRocket:~/test$ ls
hardlink_labwork2 symblink_labwork2
amarocket@AmaRocket:~/test$ ls -s
итого 16
16 hardlink_labwork2 0 symblink_labwork2
amarocket@AmaRocket:~/test$ cat hardlink_labwork2
clear
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py
/bin/python3 /home/amarocket/Console_app/hello.py

```

## 7) Using the locate utility, find all files that contain the squid and traceroute sequence.

```

amarocket@AmaRocket:~/test$ locate --help
Usage: locate [OPTION]... [PATTERN]...
search for entries in a mlocate database.

-A, --all          only print entries that match all patterns
-B, --basename     match only the base name of path names
-C, --count        only print number of found entries
-D, --database DBPATH use DBPATH instead of default database (which is
                       /var/lib/mlocate/mlocate.db)
-E, --existing    only print entries for currently existing files
-L, --follow      follow trailing symbolic links when checking file
                  existence (default)
-H, --help         print this help
-I, --ignore-case ignore case distinctions when matching patterns
-P, --ignore-spaces ignore punctuation and spaces when matching patterns
-T, --transliterate ignore accents using iconv transliteration when
                      matching patterns
-l, --limit, -n LIMIT limit output (or counting) to LIMIT entries
-m, -- mmap         ignored, for backward compatibility
-N, --nofollow, -H don't follow trailing symbolic links when checking file
                  existence
-O, --null         separate entries with NUL on output
-S, --statistics   don't search for entries, print statistics about each
                   used database
-Q, --quiet        report no error messages about reading databases
-R, --regexp REGEXP search for basic regexp REGEXP instead of patterns
--regex            patterns are extended regexps
-S, --stdio        ignored, for backward compatibility
-V, --version      print version information
-W, --wholename    match whole path name (default)

Отчёт об ошибках отправьте https://pagure.io/mlocate.
amarocket@AmaRocket:~/test$ locate -A squid
amarocket@AmaRocket:~/test$ locate -A traceroute
/etc/alternatives/traceroute6
/etc/alternatives/traceroute6.8.gz
/usr/bin/traceroute6
/usr/bin/traceroute6.iputils
/usr/lib/modules/5.11.0-38-generic/kernel/drivers/tty/n_tracerouter.ko
/usr/lib/modules/5.11.0-40-generic/kernel/drivers/tty/n_tracerouter.ko
/usr/share/man/man8/traceroute6.8.gz
/usr/share/man/man8/traceroute6.iputils.8.gz
/usr/src/linux-hwe-5.11-headers-5.11.0-38/tools/testing/selftests/net/traceroute.sh
/usr/src/linux-hwe-5.11-headers-5.11.0-40/tools/testing/selftests/net/traceroute.sh
/var/lib/dpkg/alternatives/traceroute6
amarocket@AmaRocket:~/test$ []

```

Or:

```
Терминал
locate: неверный ключ - «g»
amarocket@AmaRocket:~$ locate grep squid
/etc/alternatives/lzgrep
/etc/alternatives/lzgrep.1.gz
/etc/alternatives/lzfgrep
/etc/alternatives/lzfgrep.1.gz
/etc/alternatives/lzgrep
/etc/alternatives/lzgrep.1.gz
/opt/lampp/bin/bzgrep
/opt/lampp/bin/bzfgrep
/opt/lampp/bin/bzgrep
/opt/lampp/bin/msggrep
/opt/lampp/bin/pcregrep
/opt/lampp/bin/ptargrep
/opt/lampp/lib/php/doc/HTML_CSS/examples/css_grepStyles.php
/opt/lampp/man/man1/bzgrep.1
/opt/lampp/man/man1/bzfgrep.1
/opt/lampp/man/man1/bzgrep.1
/opt/lampp/share/doc/pcre/pcregrep.txt
/opt/lampp/share/doc/pcre/html/pcregrep.html
/opt/lampp/share/man/man1/msggrep.1
/opt/lampp/share/man/man1/pcregrep.1
/opt/lampp/share/man/man1/ptargrep.1
/snap/core/11798/bin/bzgrep
/snap/core/11798/bin/bzfgrep
/snap/core/11798/bin/bzgrep
/snap/core/11798/bin/egrep
/snap/core/11798/bin/fgrep
/snap/core/11798/bin/grep
/snap/core/11798/bin/zgrep
/snap/core/11798/bin/zfgrep
/snap/core/11798/usr/bin/lzgrep
/snap/core/11798/usr/bin/lzfgrep
/snap/core/11798/usr/bin/lzgrep
/snap/core/11798/usr/bin/pgrep
/snap/core/11798/usr/bin/rgrep
/snap/core/11798/usr/bin/xzgrep
/snap/core/11798/usr/bin/xzfgrep
/snap/core/11798/usr/bin/xzgrep
/snap/core/11798/usr/lib/python3/dist-packages/serial/urlhandler/protocol_hwgrep.py
/snap/core/11798/usr/lib/python3/dist-packages/serial/urlhandler/_pycache__/protocol_hwgrep.cpython-35.pyc
/snap/core/11798/usr/share/bash-completion/completions/ngrep
/snap/core/11798/usr/share/bash-completion/completions/pgrep
/snap/core/11798/usr/share/doc/grep
/snap/core/11798/usr/share/doc/grep/changelog.Debian.gz
/snap/core/11798/usr/share/doc/grep/copyright.gz
/snap/core/11993/bin/bzgrep
/snap/core/11993/bin/bzfgrep
/snap/core/11993/bin/bzgrep
/snap/core/11993/bin/egrep
/snap/core/11993/bin/fgrep
/snap/core/11993/bin/grep
/snap/core/11993/bin/zgrep
```

```
amarocket@AmaRocket:~$ locate grep traceroute
/etc/alternatives/lzgrep
/etc/alternatives/lzgrep.1.gz
/etc/alternatives/lzfgrep
/etc/alternatives/lzfgrep.1.gz
/etc/alternatives/lzgrep
/etc/alternatives/lzgrep.1.gz
/etc/alternatives/traceroute6
/etc/alternatives/traceroute6.8.gz
/opt/lampp/bin/bzgrep
/opt/lampp/bin/bzfgrep
/opt/lampp/bin/bzgrep
/opt/lampp/bin/msggrep
/opt/lampp/bin/pcregrep
/opt/lampp/bin/ptargrep
/opt/lampp/lib/php/doc/HTML_CSS/examples/css_grepStyles.php
/opt/lampp/man/man1/bzgrep.1
/opt/lampp/man/man1/bzfgrep.1
/opt/lampp/man/man1/bzgrep.1
/opt/lampp/share/doc/pcre/pcregrep.txt
/opt/lampp/share/doc/pcre/html/pcregrep.html
/opt/lampp/share/man/man1/msggrep.1
/opt/lampp/share/man/man1/pcregrep.1
/opt/lampp/share/man/man1/ptargrep.1
/snap/core/11798/bin/bzgrep
/snap/core/11798/bin/bzfgrep
/snap/core/11798/bin/bzgrep
/snap/core/11798/bin/egrep
/snap/core/11798/bin/fgrep
/snap/core/11798/bin/grep
/snap/core/11798/bin/zgrep
/snap/core/11798/bin/zfgrep
/snap/core/11798/usr/bin/lzgrep
/snap/core/11798/usr/bin/lzfgrep
/snap/core/11798/usr/bin/lzgrep
/snap/core/11798/usr/bin/pgrep
/snap/core/11798/usr/bin/rgrep
/snap/core/11798/usr/bin/xzgrep
/snap/core/11798/usr/bin/xzfgrep
/snap/core/11798/usr/bin/xzgrep
/snap/core/11798/usr/lib/python3/dist-packages/serial/urlhandler/protocol_hwgrep.py
/snap/core/11798/usr/lib/python3/dist-packages/serial/urlhandler/_pycache__/protocol_hwgrep.cpython-35.pyc
/snap/core/11798/usr/share/bash-completion/completions/ngrep
/snap/core/11798/usr/share/bash-completion/completions/pgrep
/snap/core/11798/usr/share/doc/grep
/snap/core/11798/usr/share/doc/grep/changelog.Debian.gz
/snap/core/11798/usr/share/doc/grep/copyright.gz
/snap/core/11993/bin/bzgrep
/snap/core/11993/bin/bzfgrep
/snap/core/11993/bin/bzgrep
/snap/core/11993/bin/egrep
/snap/core/11993/bin/fgrep
```

## 8) Determine which partitions are mounted in the system, as well as the types of these partitions.

```
# mount -a
```

```
amarocket@AmaRocket:~$ sudo -i
root@AmaRocket:~# mount -a
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
udev on /dev type devtmpfs (rw,nosuid,nodev,noexec,relatime,size=2978484k,nr_inodes=744621,mode=755,inode64)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,gid=5,mode=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,noexec,relatime,size=602248k,mode=755,inode64)
/dev/nvme0n1p5 on / type ext4 (rw,relatime,errors=remount-ro)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,inode64)
tmpfs on /run/lock type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k,inode64)
tmpfs on /sys/fs/cgroup type tmpfs (ro,nosuid,nodev,noexec,mode=755,inode64)
cgroup2 on /sys/fs/cgroup/unified type cgroup2 (rw,nosuid,nodev,noexec,relatime,nsdelegate)
cgroup on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,nodev,noexec,relatime,xattr,name=systemd)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
efivars on /sys/firmware/efi/efivars type efivars (rw,nosuid,nodev,noexec,relatime)
none on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
cgroup on /sys/fs/cgroup/rdma type cgroup (rw,nosuid,nodev,noexec,relatime,rdma)
cgroup on /sys/fs/cgroup/freezer type cgroup (rw,nosuid,nodev,noexec,relatime,freezer)
cgroup on /sys/fs/cgroup/hugetlb type cgroup (rw,nosuid,nodev,noexec,relatime,hugetlb)
cgroup on /sys/fs/cgroup/pids type cgroup (rw,nosuid,nodev,noexec,relatime,pids)
cgroup on /sys/fs/cgroup/net_cls,net_prio type cgroup (rw,nosuid,nodev,noexec,relatime,net_cls,net_prio)
cgroup on /sys/fs/cgroup/memory type cgroup (rw,nosuid,nodev,noexec,relatime,memory)
cgroup on /sys/fs/cgroup/devices type cgroup (rw,nosuid,nodev,noexec,relatime,devices)
cgroup on /sys/fs/cgroup/cpuset type cgroup (rw,nosuid,nodev,noexec,relatime,cpuset)
cgroup on /sys/fs/cgroup/cpu,cpuacct type cgroup (rw,nosuid,nodev,noexec,relatime,cpu,cpuacct)
cgroup on /sys/fs/cgroup/perf_event type cgroup (rw,nosuid,nodev,noexec,relatime,perf_event)
cgroup on /sys/fs/cgroup/blkio type cgroup (rw,nosuid,nodev,noexec,relatime,blkio)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=28,prgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=23751)
hugetlbfss on /dev/hugepages type hugetlbfss (rw,relatime,pagesize=2M)
mqqueue on /dev/queue type mqqueue (rw,nosuid,nodev,noexec,relatime)
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime)
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime)
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)
/var/lib/snapd/snaps/bare_5.snap on /snap/bare/5 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/canonical-livepatch_105.snap on /snap/canonical-livepatch/105 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/chromium_1801.snap on /snap/chromium/1801 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/core_11798.snap on /snap/core/11798 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/core_11993.snap on /snap/core/11993 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/chromium_1810.snap on /snap/chromium/1810 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/canonical-livepatch_114.snap on /snap/canonical-livepatch/114 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/core18_2246.snap on /snap/core18/2246 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/core18_2128.snap on /snap/core18/2128 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/istekram_12.snap on /snap/istekram/12 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/core20_1169.snap on /snap/core20/1169 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/gtk-common-themes_1515.snap on /snap/gtk-common-themes/1515 type squashfs (ro,nodev,relatime,x-gdu.hide)
/dev/nvme0n1p1 on /boot/efi type vfat (rw,relatime,fmask=0077,dmask=0077,codepages=437,iocharset=iso8859-1,shortname=mixed,errors=remount-ro)
/var/lib/snapd/snaps/gtk-common-themes_1519.snap on /snap/gtk-common-themes/1519 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/snap-store_547.snap on /snap/snap-store/547 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/gnome_3-28-1804_161.snap on /snap/gnome-3-28-1804/161 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/snapd_13831.snap on /snap/snapd/13831 type squashfs (ro,nodev,relatime,x-gdu.hide)
/var/lib/snapd/snaps/snapd_13640.snap on /snap/snapd/13640 type squashfs (ro,nodev,relatime,x-gdu.hide)
```

## 9) Count the number of lines containing a given sequence of characters in a given file.

```
$ grep <pattern> <way/to/file> -c
```

```
root@AmaRocket:~# grep print /home/amarocket/softserve_1 -c
29
root@AmaRocket:~#
```

**10) Using the find command, find all files in the /etc directory containing the host character sequence.**

```
$ find /etc -name „host“
```

**11) List all objects in /etc that contain the ss character sequence. How can I duplicate a similar command using a bunch of grep?**

```
$ find /etc -name „ss“ or grep -w «seach» /way/to/file
```

**12) Organize a screen-by-screen print of the contents of the /etc directory. Hint: You must use stream redirection operations.**

```
dir /etc > test
```

```
GNU nano 2.2.6          File: test
adduser.conf           init.d             python
alternatives          initramfs-tools    python2.7
apm                  inputrc            python3
apparmor             insserv            python3.4
apparmor.d           insserv.conf      rc0.d
apt                  insserv.conf.d    rc1.d
bash.bashrc          iproute2          rc2.d
bash_completion       iscsi              rc3.d
bash_completion.d    issue              rc4.d
bindresvport.blacklist issue.net        rc5.d
blkid.conf           kbd                rc6.d
blkid.tab            kernel             rc.local
ca-certificates      kernel-img.conf   rcS.d
ca-certificates.conf ldap               resolvconf
calendar            ld.so.cache       resolv.conf
chatscripts          ld.so.conf        rmt
console-setup        ld.so.conf.d      rpc
cron.d               legal              rsyslog.conf
cron.daily           libaudit.conf     rsyslog.d
cron.hourly          libnl-3           security
cron.monthly         locale.alias      selinux
crontab              localtime         services
cron.weekly          logcheck          sgml
dbus-1               login.defs       shadow
debconf.conf         logrotate.conf   [ Read 56 lines ]
```

**13) What are the types of devices and how to determine the type of device? Give examples.**

В системе UNIX, а следовательно и Linux, существует два типа устройств: блочные устройства с прямым доступом (такие как диски) и символьные устройства (такие как ленточные накопители и последовательные порты), некоторые из них могут быть последовательными, а некоторые - с прямым доступом. Каждое поддерживаемое устройство представляется в файловой системе файлом устройства. При выполнении операций чтения

или записи с подобным файлом, происходит обмен данными между устройством, на которое указывает этот файл. Такой способ доступа к устройствам позволяет не использовать специальные программы (а также специальные методы программирования, такие как работа с прерываниями).

Однако, для распечатки файлов используется специальная программа (обычно lpr(1)), которая контролирует поток поступающих файлов во избежание возникновения конфликтных ситуаций, например, при попытке распечатать на одном принтере одновременно несколько разных файлов. По мере распечатки, новые файлы поступают автоматически. По подобной схеме работает большинство устройств. Однако с файлами устройств проблемы возникают очень редко.

Так как устройства отображаются как файлы в файловой системе (в каталоге /dev), несложно обнаружить с помощью команды ls(1) какие существуют файлы устройств. После выполнения команды ls -l на экран выводится список файлов, причем в первой колонке содержится тип файла и права доступа к нему.

#### **14) How to determine the type of file in the system, what types of files are there?**

```
$ ls la
```

#### **15) \* List the first 5 directory files that were recently accessed in the /etc directory.**

```
$ find /etc -ctime +1 | head -n 5
```