

Поиск файлов. Перенаправление ввода-вывода. Просмотр запущенных процессов

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Цели и задачи работы

Цель лабораторной работы

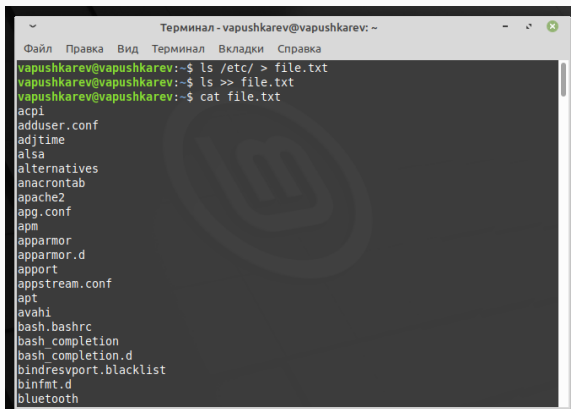
Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

Задачи лабораторной работы

- 1 Изучить перенаправление ввода-вывода
- 2 Изучить работу фильтров
- 3 Изучить команду поиска
- 4 Ознакомиться с управлением процессами
- 5 Ознакомиться с командами `df` `du`

Процесс выполнения лабораторной работы

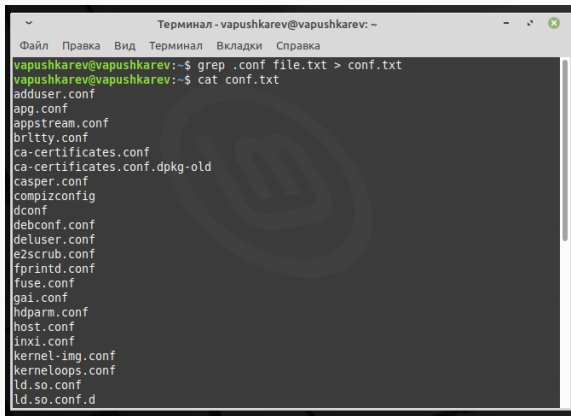
Перенаправление ввода-вывода

A terminal window titled "Терминал - vapushkarev@vapushkarev: ~" with a menu bar containing "Файл", "Правка", "Вид", "Терминал", "Вкладки", and "Справка". The terminal shows a sequence of commands: "ls /etc/" followed by a prompt, then "> file.txt" followed by a prompt, then "ls >> file.txt" followed by a prompt, and finally "cat file.txt" followed by a prompt. The output of the cat command is a list of files in /etc: acpi, adduser.conf, adjtime, alsa, alternatives, anacrontab, apache2, apg.conf, apm, apparmor, apparmor.d, appport, appstream.conf, apt, avahi, bash.bashrc, bash_completion, bash_completion.d, bindresvport.blacklist, binfmt.d, and bluetooth.

```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
vapushkarev@vapushkarev:~$ ls /etc/ > file.txt
vapushkarev@vapushkarev:~$ ls >> file.txt
vapushkarev@vapushkarev:~$ cat file.txt
acpi
adduser.conf
adjtime
alsa
alternatives
anacrontab
apache2
apg.conf
apm
apparmor
apparmor.d
appport
appstream.conf
apt
avahi
bash.bashrc
bash_completion
bash_completion.d
bindresvport.blacklist
binfmt.d
bluetooth
```

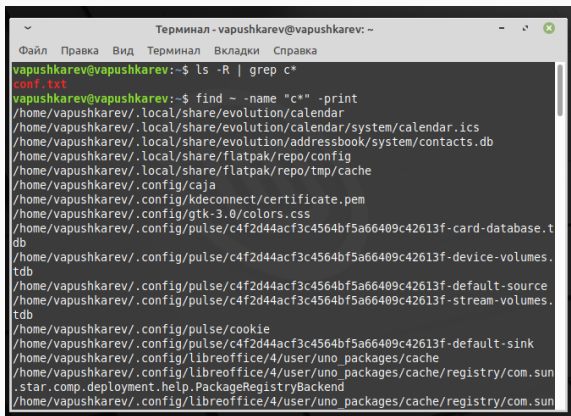
Figure 1: Запись в файл

Работа фильтра

A terminal window titled "Терминал - vapushkarev@vapushkarev: ~" with a menu bar containing "Файл", "Правка", "Вид", "Терминал", "Вкладки", and "Справка". The terminal shows two commands: "grep .conf file.txt > conf.txt" and "cat conf.txt". The output of the second command is a list of 20 files with .conf extensions: adduser.conf, apg.conf, appstream.conf, brltty.conf, ca-certificates.conf, ca-certificates.conf.dpkg-old, casper.conf, compizconfig, dconf, debconf.conf, deluser.conf, e2scrub.conf, fprintd.conf, fuse.conf, gai.conf, hdparm.conf, host.conf, inxi.conf, kernel-img.conf, kerneloops.conf, ld.so.conf, and ld.so.conf.d.

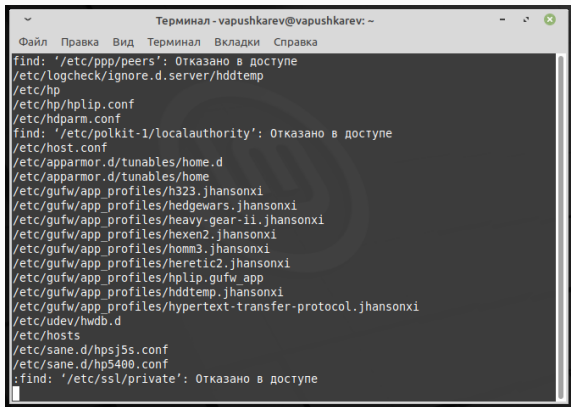
```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
vapushkarev@vapushkarev:~$ grep .conf file.txt > conf.txt
vapushkarev@vapushkarev:~$ cat conf.txt
adduser.conf
apg.conf
appstream.conf
brltty.conf
ca-certificates.conf
ca-certificates.conf.dpkg-old
casper.conf
compizconfig
dconf
debconf.conf
deluser.conf
e2scrub.conf
fprintd.conf
fuse.conf
gai.conf
hdparm.conf
host.conf
inxi.conf
kernel-img.conf
kerneloops.conf
ld.so.conf
ld.so.conf.d
```

Figure 2: Поиск расширения .conf

A screenshot of a terminal window titled "Терминал - vapushkarev@vapushkarev: ~". The window has a menu bar with "Файл", "Правка", "Вид", "Терминал", "Вкладки", and "Справка". The terminal shows two commands and their outputs. The first command is `ls -R | grep c*`, which outputs `conf.txt`. The second command is `find ~ -name "c*" -print`, which lists various files and directories starting with 'c' in the user's home directory, including system files like `/home/vapushkarev/.local/share/evolution/calendar/system/calendar.ics` and configuration files like `/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-card-database.tdb`.

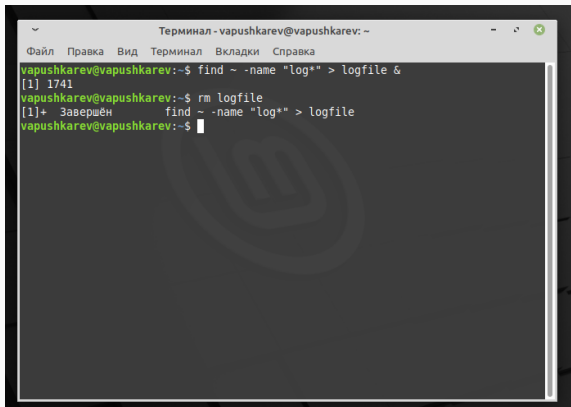
```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
vapushkarev@vapushkarev:~$ ls -R | grep c*
conf.txt
vapushkarev@vapushkarev:~$ find ~ -name "c*" -print
/home/vapushkarev/.local/share/evolution/calendar
/home/vapushkarev/.local/share/evolution/calendar/system/calendar.ics
/home/vapushkarev/.local/share/evolution/addressbook/system/contacts.db
/home/vapushkarev/.local/share/flatpak/repo/config
/home/vapushkarev/.local/share/flatpak/repo/tmp/cache
/home/vapushkarev/.config/caja
/home/vapushkarev/.config/kdeconnect/certificate.pem
/home/vapushkarev/.config/gtk-3.0/colors.css
/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-card-database.t
db
/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-device-volumes.
tdb
/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-default-source
/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-stream-volumes.
tdb
/home/vapushkarev/.config/pulse/cookie
/home/vapushkarev/.config/pulse/c4f2d44acf3c4564bf5a66409c42613f-default-sink
/home/vapushkarev/.config/libreoffice/4/user/uno_packages/cache
/home/vapushkarev/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun
.star.comp.deployment.help.PackageRegistryBackend
/home/vapushkarev/.config/libreoffice/4/user/uno_packages/cache/registry/com.sun
```

Figure 3: Поиск файлов



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
find: '/etc/ppp/peers': Отказано в доступе
/etc/logcheck/ignore.d.server/hddtemp
/etc/hp
/etc/hp/hplip.conf
/etc/hdparm.conf
find: '/etc/polkit-1/localauthority': Отказано в доступе
/etc/host.conf
/etc/apparmor.d/tunables/home.d
/etc/apparmor.d/tunables/home
/etc/gufw/app_profiles/h323.jhansonxi
/etc/gufw/app_profiles/hedgewars.jhansonxi
/etc/gufw/app_profiles/heavy-gear-ii.jhansonxi
/etc/gufw/app_profiles/hexen2.jhansonxi
/etc/gufw/app_profiles/homm3.jhansonxi
/etc/gufw/app_profiles/heretic2.jhansonxi
/etc/gufw/app_profiles/hplip.gufw_app
/etc/gufw/app_profiles/hddtemp.jhansonxi
/etc/gufw/app_profiles/hypertext-transfer-protocol.jhansonxi
/etc/udev/hwdb.d
/etc/hosts
/etc/sane.d/hpsj5s.conf
/etc/sane.d/hp5400.conf
find: '/etc/ssl/private': Отказано в доступе
```

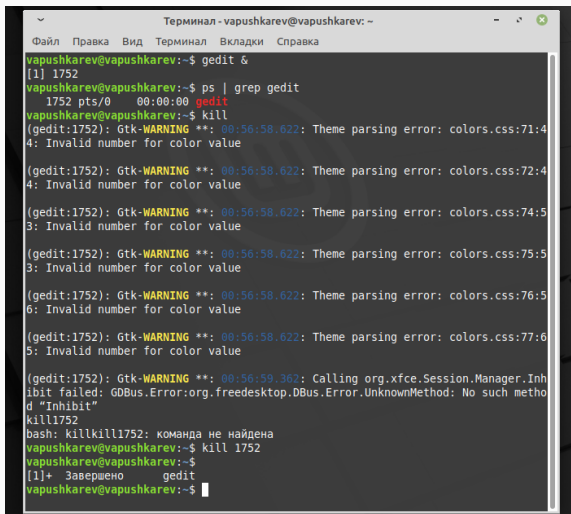
Figure 4: Поиск файлов

A terminal window titled "Терминал - vapushkarev@vapushkarev: ~" with a menu bar (Файл, Правка, Вид, Терминал, Вкладки, Справка). The terminal shows the following commands and output:

```
vapushkarev@vapushkarev:~$ find ~ -name "log*" > logfile &  
[1] 1741  
vapushkarev@vapushkarev:~$ rm logfile  
[1]+  Завершён      find ~ -name "log*" > logfile  
vapushkarev@vapushkarev:~$
```

Figure 5: Фоновый запуск процесса

Управление процессами



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка

vapushkarev@vapushkarev:~$ gedit &
[1] 1752
vapushkarev@vapushkarev:~$ ps | grep gedit
 1752 pts/0    00:00:00 gedit
vapushkarev@vapushkarev:~$ kill
(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:71:4
4: Invalid number for color value

(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:72:4
4: Invalid number for color value

(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:74:5
3: Invalid number for color value

(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:75:5
3: Invalid number for color value

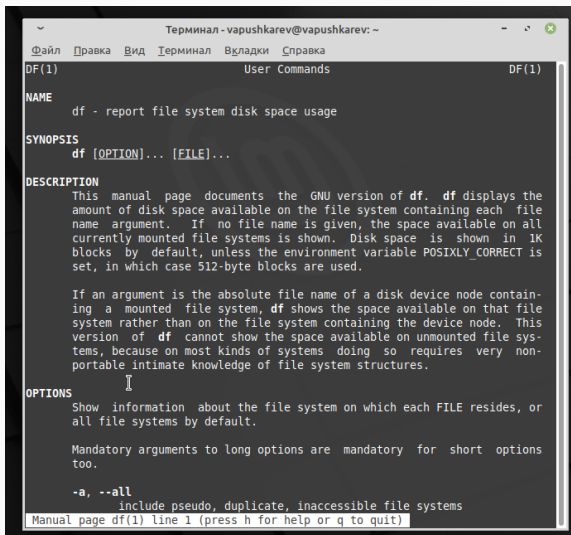
(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:76:5
6: Invalid number for color value

(gedit:1752): Gtk-WARNING **: 00:56:58.622: Theme parsing error: colors.css:77:6
5: Invalid number for color value

(gedit:1752): Gtk-WARNING **: 00:56:59.362: Calling org.xfce.Session.Manager.Inh
ibit failed: GDBus.Error:org.freedesktop.DBus.Error.UnknownMethod: No such metho
d "Inhibit"
kill1752
bash: killkill1752: команда не найдена
vapushkarev@vapushkarev:~$ kill 1752
vapushkarev@vapushkarev:~$
[1]+  Завершено gedit
vapushkarev@vapushkarev:~$
```

Figure 6: Фоновый запуск и завершение процесса

Команды df и du



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
DF(1)                                     User Commands                                     DF(1)

NAME
    df - report file system disk space usage

SYNOPSIS
    df [OPTION]... [FILE]...

DESCRIPTION
    This manual page documents the GNU version of df. df displays the
    amount of disk space available on the file system containing each file
    name argument. If no file name is given, the space available on all
    currently mounted file systems is shown. Disk space is shown in 1K
    blocks by default, unless the environment variable POSIXLY_CORRECT is
    set, in which case 512-byte blocks are used.

    If an argument is the absolute file name of a disk device node contain-
    ing a mounted file system, df shows the space available on that file
    system rather than on the file system containing the device node. This
    version of df cannot show the space available on unmounted file sys-
    tems, because on most kinds of systems doing so requires very non-
    portable intimate knowledge of file system structures.

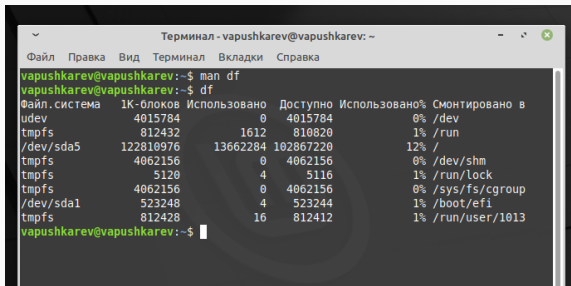
OPTIONS
    Show information about the file system on which each FILE resides, or
    all file systems by default.

    Mandatory arguments to long options are mandatory for short options
    too.

    -a, --all
        include pseudo, duplicate, inaccessible file systems
Manual page df(1) line 1 (press h for help or q to quit)
```

Figure 7: Справка по команде df

Команды df и du

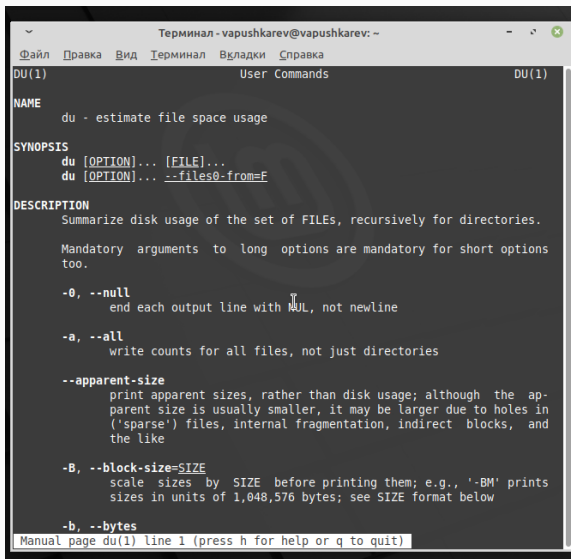


The screenshot shows a terminal window titled "Терминал - vapushkarev@vapushkarev: ~". The user has entered the command `df`. The output is a table showing disk space usage for various filesystems.

Файл. система	1K-блоков	Использовано	Доступно	Использовано%	Смонтировано в
udev	4015784	0	4015784	0%	/dev
tmpfs	812432	1612	810820	1%	/run
/dev/sda5	122810976	13662284	102867220	12%	/
tmpfs	4062156	0	4062156	0%	/dev/shm
tmpfs	5120	4	5116	1%	/run/lock
tmpfs	4062156	0	4062156	0%	/sys/fs/cgroup
/dev/sda1	523248	4	523244	1%	/boot/efi
tmpfs	812428	16	812412	1%	/run/user/1013

Figure 8: Запуск команды df

Команды df и du



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
DU(1)                                     User Commands                                     DU(1)

NAME
    du - estimate file space usage

SYNOPSIS
    du [OPTION]... [FILE]...
    du [OPTION]... --files0-from=F

DESCRIPTION
    Summarize disk usage of the set of FILES, recursively for directories.

    Mandatory arguments to long options are mandatory for short options too.

    -0, --null
        end each output line with NUL, not newline

    -a, --all
        write counts for all files, not just directories

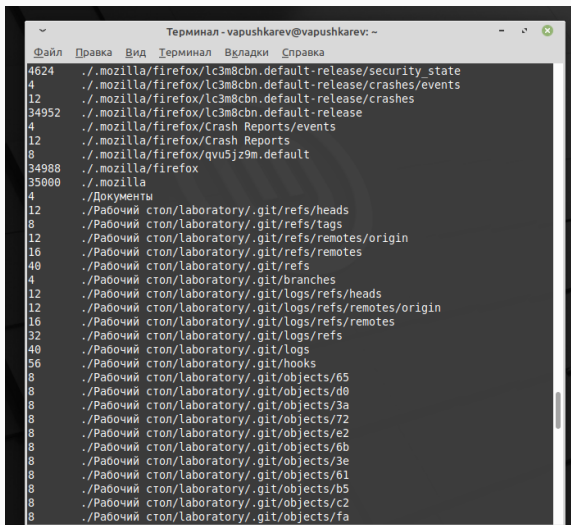
    --apparent-size
        print apparent sizes, rather than disk usage; although the apparent size is usually smaller, it may be larger due to holes in ('sparse') files, internal fragmentation, indirect blocks, and the like

    -B, --block-size=SIZE
        scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see SIZE format below

    -b, --bytes
        Manual page du(1) line 1 (press h for help or q to quit)
```

Figure 9: Справка по команде du

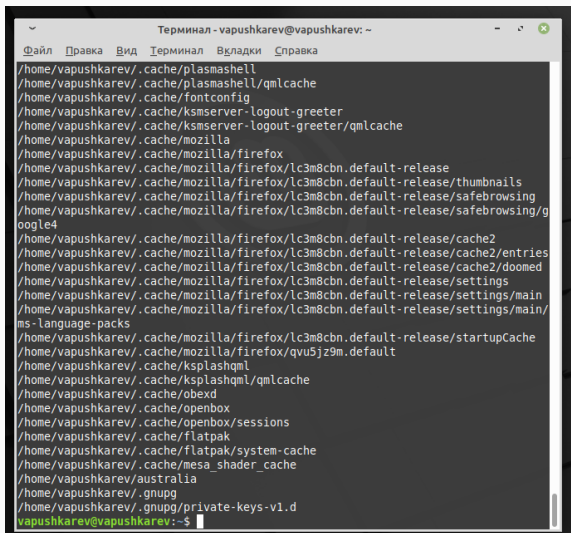
Команды df и du



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка
4624  ./mozilla/firefox/lc3m8cbn.default-release/security_state
4    ./mozilla/firefox/lc3m8cbn.default-release/crashes/events
12   ./mozilla/firefox/lc3m8cbn.default-release/crashes
34952 ./mozilla/firefox/lc3m8cbn.default-release
4    ./mozilla/firefox/Crash Reports/events
12   ./mozilla/firefox/Crash Reports
8    ./mozilla/firefox/qvu5jz9m.default
34988 ./mozilla/firefox
35000 ./mozilla
4    ./Документы
12   ./Рабочий стол/laboratory/.git/refs/heads
8    ./Рабочий стол/laboratory/.git/refs/tags
12   ./Рабочий стол/laboratory/.git/refs/remotes/origin
16   ./Рабочий стол/laboratory/.git/refs/remotes
40   ./Рабочий стол/laboratory/.git/refs
4    ./Рабочий стол/laboratory/.git/branches
12   ./Рабочий стол/laboratory/.git/logs/refs/heads
12   ./Рабочий стол/laboratory/.git/logs/refs/remotes/origin
16   ./Рабочий стол/laboratory/.git/logs/refs/remotes
32   ./Рабочий стол/laboratory/.git/logs/refs
40   ./Рабочий стол/laboratory/.git/logs
56   ./Рабочий стол/laboratory/.git/hooks
8    ./Рабочий стол/laboratory/.git/objects/65
8    ./Рабочий стол/laboratory/.git/objects/d0
8    ./Рабочий стол/laboratory/.git/objects/3a
8    ./Рабочий стол/laboratory/.git/objects/72
8    ./Рабочий стол/laboratory/.git/objects/e2
8    ./Рабочий стол/laboratory/.git/objects/6b
8    ./Рабочий стол/laboratory/.git/objects/3e
8    ./Рабочий стол/laboratory/.git/objects/61
8    ./Рабочий стол/laboratory/.git/objects/b5
8    ./Рабочий стол/laboratory/.git/objects/c2
8    ./Рабочий стол/laboratory/.git/objects/fa
```

Figure 10: Запуск команды du

Команда поиска



```
Терминал - vapushkarev@vapushkarev: ~
Файл  Правка  Вид  Терминал  Вкладки  Справка

/home/vapushkarev/.cache/plasmashell
/home/vapushkarev/.cache/plasmashell/qmlcache
/home/vapushkarev/.cache/fontconfig
/home/vapushkarev/.cache/ksmservice-logout-greeter
/home/vapushkarev/.cache/ksmservice-logout-greeter/qmlcache
/home/vapushkarev/.cache/mozilla
/home/vapushkarev/.cache/mozilla/firefox
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/thumbnails
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/safebrowsing
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/safebrowsing/g
oogle4
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/cache2
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/cache2/entries
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/cache2/oomed
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/settings
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/settings/main
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/settings/main/
ms-language-packs
/home/vapushkarev/.cache/mozilla/firefox/lc3m8cbn.default-release/startupCache
/home/vapushkarev/.cache/mozilla/firefox/qvu5j29m.default
/home/vapushkarev/.cache/ksplashqml
/home/vapushkarev/.cache/ksplashqml/qmlcache
/home/vapushkarev/.cache/obexd
/home/vapushkarev/.cache/openbox
/home/vapushkarev/.cache/openbox/sessions
/home/vapushkarev/.cache/flatpak
/home/vapushkarev/.cache/flatpak/system-cache
/home/vapushkarev/.cache/mesa_shader_cache
/home/vapushkarev/australia
/home/vapushkarev/.gnupg
/home/vapushkarev/.gnupg/private-keys-v1.d
vapushkarev@vapushkarev:~$
```

Figure 11: Поиск директорий

Выводы по проделанной работе

В данной работе мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. А также приобрели практические навыки по управлению процессами.