

# Инструменты для поиска и фильтрации файлов

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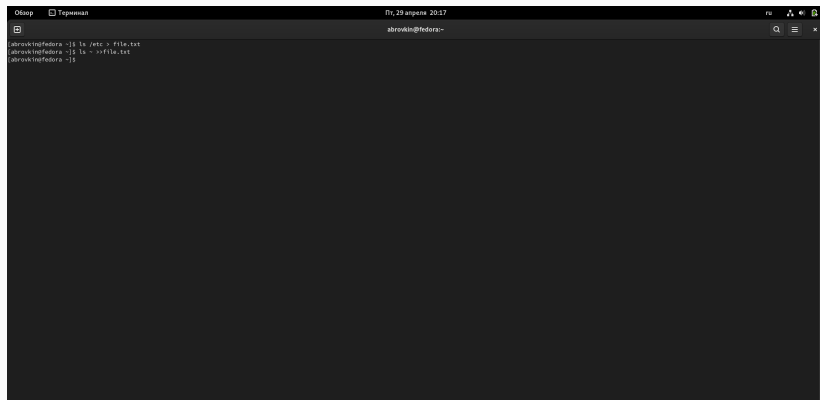
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Ознакомление с инструментами поиска файлов и фильтрации текстовых данных. Приобретение практических навыков: по управлению процессами (и заданиями), по проверке использования диска и обслуживанию файловых систем.

# Выполнение лабораторной работы

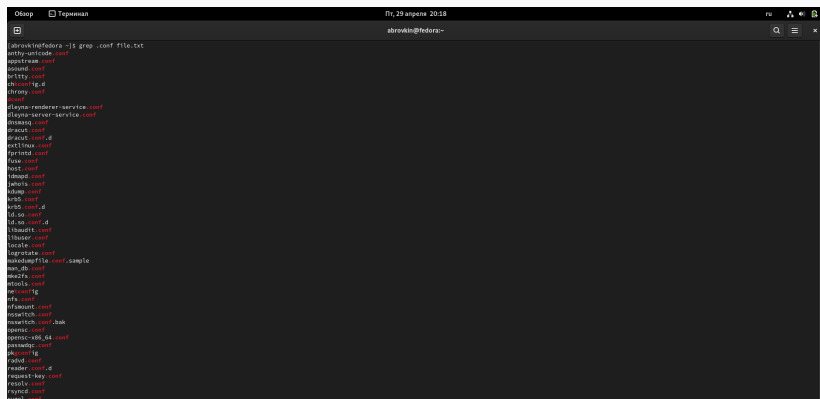
Записываю в файл file.txt названия файлов, содержащихся в каталоге /etc. Дописываю в этот же файл названия файлов, содержащихся в домашнем каталоге.



```
abrovkin@fedora:~$ ls /etc > file.txt
abrovkin@fedora:~$ ls ~ >> file.txt
abrovkin@fedora:~$
```

**Figure 1:** Записал в файл названия файлов из каталога /etc

Вывожу имена всех файлов из file.txt, имеющих расширение .conf, после чего записал их в новый текстовый файл conf.txt

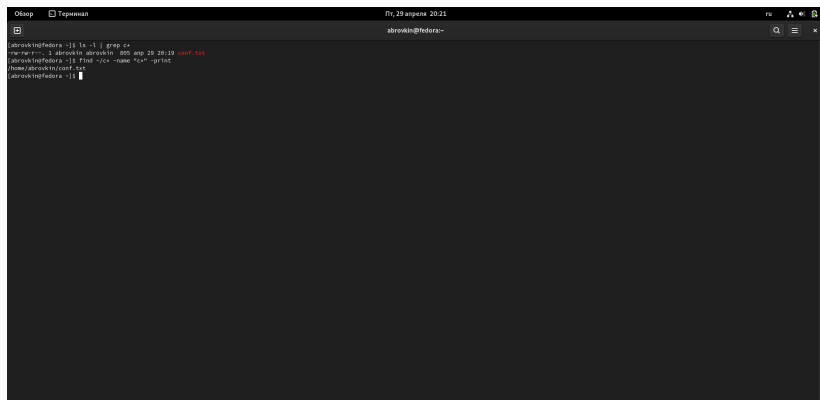


```
abrovkin@fedora:~$ ls grep .conf file.txt
anthy-unicode.conf
appstream.conf
asound.conf
brltty.conf
chconfg.d
chrony.conf
cmap.conf
delaya-renderer-service.conf
delaya-server-service.conf
dnsmasq.conf
dracut.conf
dracut.conf.d
extlinux.conf
fprintd.conf
fuse.conf
host.conf
idmapi.conf
ipmapi.conf
kdump.conf
krb5.conf
krb5.conf.d
ld.so.conf
ld.so.conf.d
libaudit.conf
libuser.conf
locale.conf
logrotate.conf
maximfile.conf.sample
man_db.conf
mozjs.conf
nftools.conf
netconfig
nfs.conf
nfsauct.conf
nswatch.conf
nswatch.conf.bak
opensc.conf
opensc-x86_64.conf
passwdqc.conf
pkcsconf1g
radd.conf
reader.conf.d
requestkey.conf
resolv.conf
rsyncd.conf
rzcat.conf
```

Figure 2: Расширение .conf



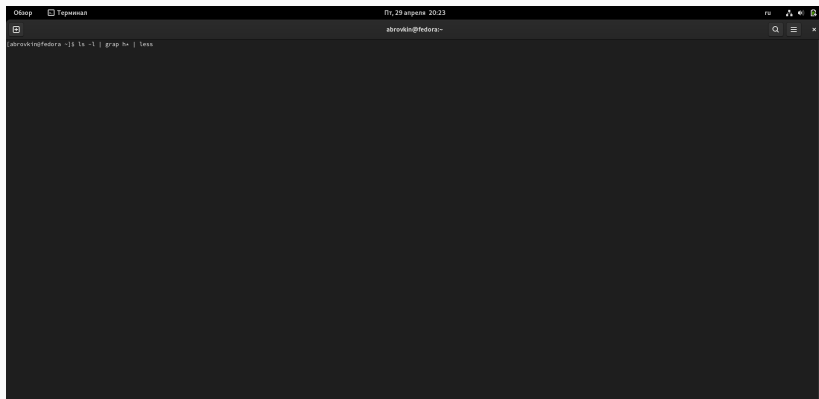
Определил, какие файлы в домашнем каталоге имеют имена, которые начинаются с символа с. Привел несколько примеров, как это сделать.

A terminal window titled 'Терминал' (Terminal) with a dark background. The window shows a series of commands and their outputs in a light-colored font. The commands are: 'ls -l | grep c+', 'find -yc+ -name "c\*" -print', and 'find ~/abrovin/conf -c+'. The output of the first command shows a file 'conf.txt' with permissions '-rwxr-xr-x' and size '800'. The output of the second command shows the full path 'home/abrovin/conf.txt'. The output of the third command is empty, indicating no files were found in that specific directory.

```
abrovin@fedora ~$ ls -l | grep c+
-rwxr-xr-x 1 abrovin abrovin 800 apr 20 20:10 conf.txt
abrovin@fedora ~$ find -yc+ -name "c*" -print
home/abrovin/conf.txt
abrovin@fedora ~$ find ~/abrovin/conf -c+
```

**Figure 3:** Файлы с буквы с

Вывел на экран имена файлов из каталога /etc, начинающиеся с символа h.



```
abroukin@fedora:~$ ls -l | grep h | less
```

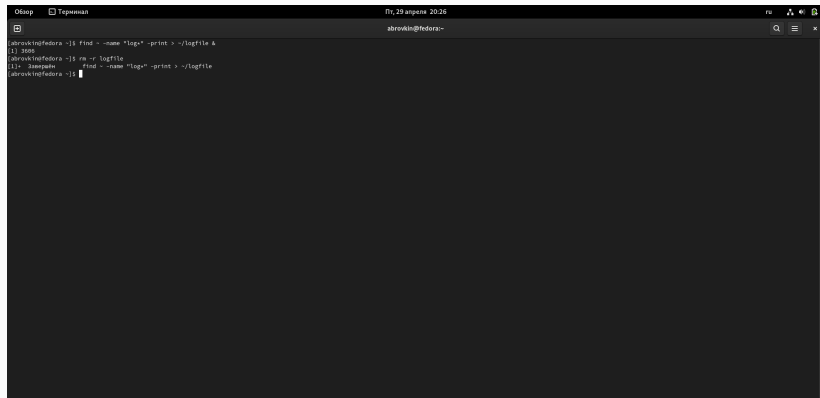
The image shows a terminal window with a dark background. The title bar at the top indicates the window is titled 'Терминал' (Terminal) and shows the date and time 'Пт, 29 апреля 20:23'. The terminal prompt is 'abroukin@fedora:~\$'. The command 'ls -l | grep h | less' has been entered and executed. The output of the command is not visible in the image, as the terminal is currently in the 'less' pager mode, which typically displays the first few lines of output before pausing.

**Figure 4:** Файлы с буквы h



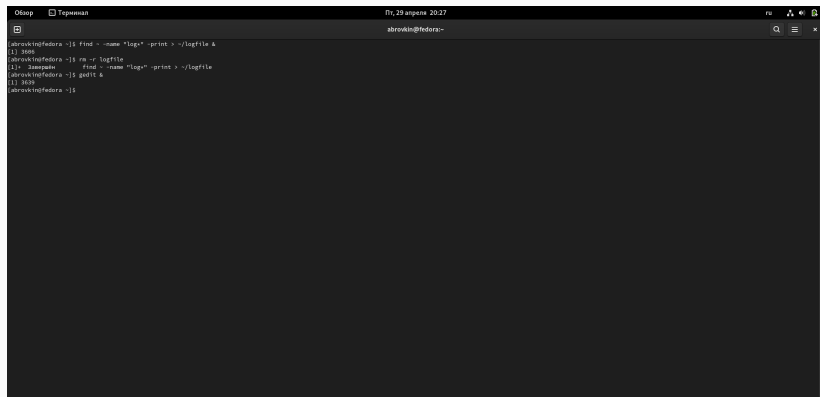


Запустил в фоновом режиме процесс, который будет записывать в файл ~/logfile файлы, имена которых начинаются с log. Удалил файл ~/logfile.



```
abroavkin@fedora:~$ find -name "log*" -print > ~/logfile &
[1] 3608
abroavkin@fedora:~$ rm -r logfile
[1]- 28092016 find -name "log*" -print > ~/logfile
abroavkin@fedora:~$
```

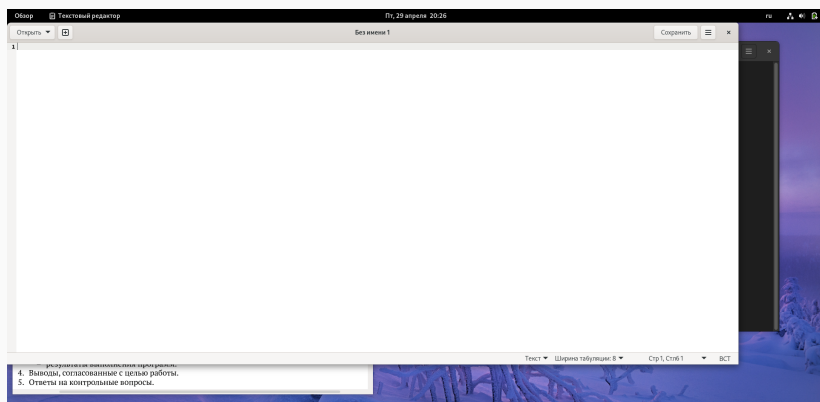
Запустил из консоли в фоновом режиме редактор gedit.



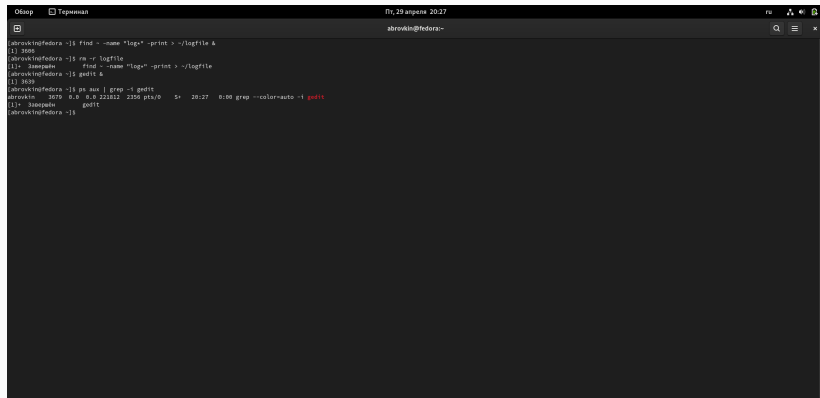
```
Обзор Терминал          Пт, 29 апреля 20:27          ru  [system icons]
abrovkin@fedora:~$

abrovkin@fedora:~$ find -name "logs" -print > ~/logfile &
[1] 3608
abrovkin@fedora:~$ rm -r logfile
[1] 3608rm
abrovkin@fedora:~$ find -name "logs" -print > ~/logfile
abrovkin@fedora:~$ gedit &
[1] 3639
abrovkin@fedora:~$
```

**Figure 5:** Запустил редактор

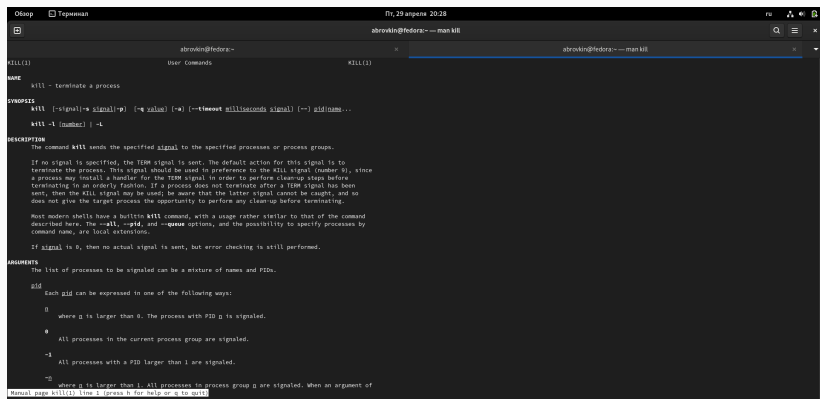


Определил идентификатор процесса gedit Используя команду ps, конвейер и фильтр grep. Более простым способом определить этот идентификатор не получилось.



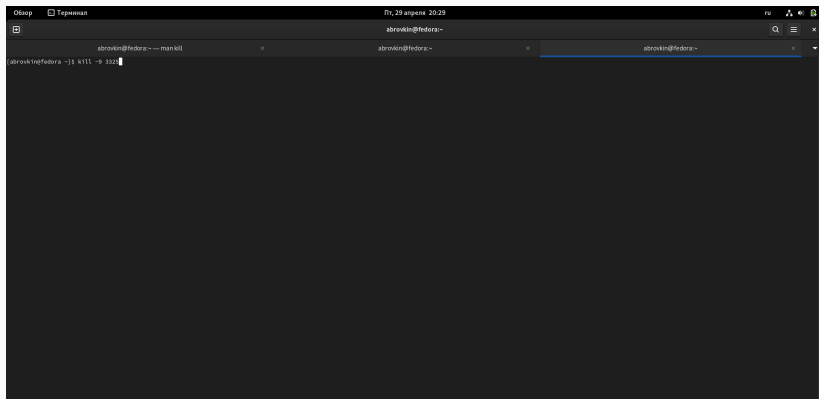
```
abroavkin@fedora:~$ find -name "logs" -print > ~/logfile &
[1] 3608
abroavkin@fedora:~$ rm -r logfile
[1]- 3608rm      find -name "logs" -print > ~/logfile
abroavkin@fedora:~$ gedit &
[1] 3639
abroavkin@fedora:~$ ps aux | grep -t gedit
abroavkin  3679  0.0  0.0 221812 2356 pts/0    S+   20:27   0:00 grep --color=auto -t gedit
[1]- 3608rm      gedit
abroavkin@fedora:~$
```

Прочел справку (man) команды kill, после чего использовал её для завершения процесса gedit.

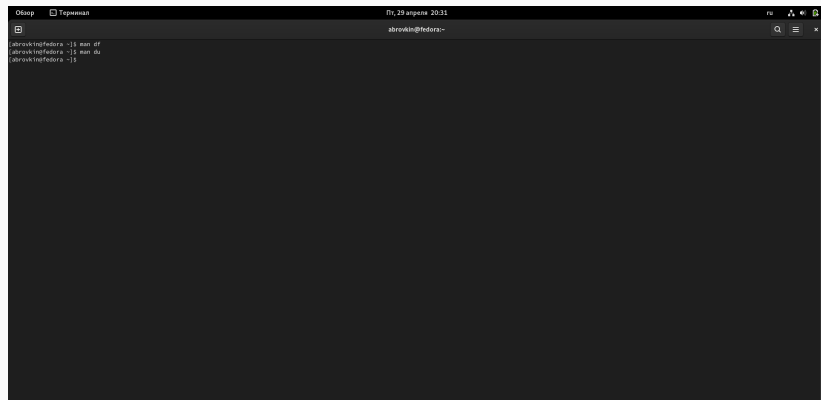


```
Отобр Терминал
Пт, 29 апреля 20:28
abrokin@fedora: ~ — man kill
abrokin@fedora: ~ — man kill
kill(1)
User Commands
kill(1)
NAME
kill - terminate a process
SYNOPSIS
kill [-signal|--signal] [-p] [-q value] [-s] [--timeout milliseconds signal] [--pid name...]
kill -l [number] | -L
DESCRIPTION
The command kill sends the specified signal to the specified processes or process groups.
If no signal is specified, the TERM signal is sent. The default action for this signal is to
terminate the process. This signal should be used in preference to the KILL signal (number 9), since
a process may install a handler for the TERM signal in order to perform clean-up steps before
terminating in an orderly fashion. If a process does not terminate after a TERM signal has been
sent, then the KILL signal may be used; be aware that the latter signal cannot be caught, and so
does not give the target process the opportunity to perform any clean-up before terminating.
Most modern shells have a builtin kill command, with a usage rather similar to that of the command
described here. The --all, --pid, and --queue options, and the possibility to specify processes by
command name, are local extensions.
If signal is 0, then no actual signal is sent, but error checking is still performed.
ARGUMENTS
The list of processes to be signaled can be a mixture of names and PIDs.
pid
Each pid can be expressed in one of the following ways:
0
where p is larger than 0. The process with PID p is signaled.
0
All processes in the current process group are signaled.
-1
All processes with a PID larger than 1 are signaled.
-0
where p is larger than 1. All processes in process group p are signaled. When an argument of
Manual page kill(1): line 1 (press h for help or q to quit)
```

Figure 6: команда kill



Выполнил команды `df` и `du` Предварительно получив более подробную информацию об этих командах, с помощью команды `man`.



The image shows a terminal window with a dark background. The title bar at the top indicates the window is titled 'Терминал' (Terminal) and shows the date and time 'Пт, 29 апреля 2031'. The terminal content shows the user 'abrovkin@fedora' at the prompt. The user has entered the command `man df`, followed by `man du`, and then another `man du` command. The output of these commands is not visible in the screenshot.

```
abrovkin@fedora ~$ man df
abrovkin@fedora ~$ man du
abrovkin@fedora ~$ man du
```

**Figure 7:** команды `df` and `du`

```
ОБНОР  Терминал  Пн, 29 апреля 2031  ru  [Icons]
abrokin@fedora:~ -- man df  [Search] [Menu] [Close]
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 containing 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 systems, because on most kinds of systems doing so requires very nonportable 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.

-m, --all
    include pseudo, duplicate, inaccessible file systems

-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

--direct
    show statistics for a file instead of mount point

-h, --human-readable
    print sizes in powers of 1024 (e.g., 1023M)

-H, --si
    print sizes in powers of 1000 (e.g., 1.1G)

-t, --inodes
    list inode information instead of block usage

-k, --block-size=KB
    like --block-size=1K

-l, --local
    limit listing to local file systems

--no-sync
    do not invoke sync before getting usage info (default)

Manual page df(1) line 1 (press h for help or q to quit)
```



```
ОБНОП  Терминал  Пн, 29 апреля 2023  ru  [Icons]
abrovkin@fedora:~ -- man du
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
        equivalent to '--apparent-size --block-size=1'

    -c, --total
        produce a grand total

    -D, --dereference-args
        dereference only symlinks that are listed on the command line

    -d, --max-depth=N
        print the total for a directory (or file, with --all) only if it is N or fewer levels below the command line argument; --max-depth=1 is the same as --summarize

    --files0-from=F
        summarize disk usage of the NUL-terminated file names specified in file F; if F is -, then read names from standard input

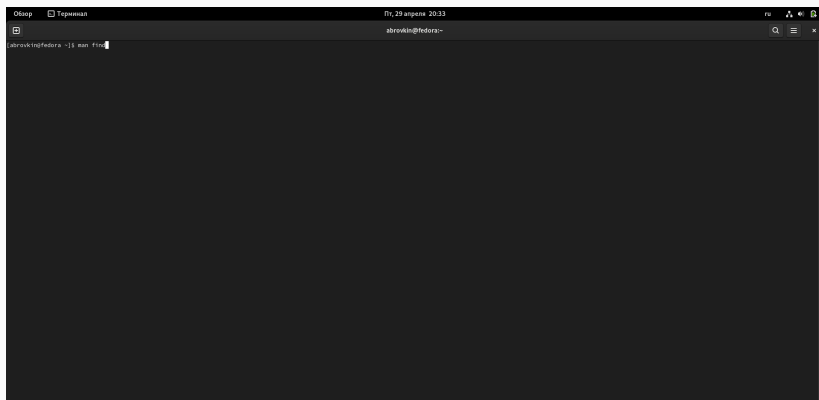
    -H
        equivalent to --dereference-args (-D)

    -h, --human-readable
        print sizes in human readable format (e.g., 1K 234M 2G)

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



Воспользовавшись справкой команды `find`, вывел имена всех директорий, имеющих в домашнем каталоге.

A terminal window titled "Терминал" (Terminal) with a dark background. The window shows the command prompt "abrovkin@fedora:~" and the command "man find" being entered. The terminal is mostly empty, suggesting the command has just been executed or the output is not visible. The window includes standard Linux terminal window controls like a search icon, a menu icon, and a close icon in the top right corner. The top status bar shows the date and time "Пт, 29 апреля 20:33".

**Figure 8:** команда `find`

```
Обзор Терминал Пн, 29 апреля 20:33 ru
abrovkin@fedora: ~ — man find

FIND(1)                                General Commands Manual                                FIND(1)

NAME
  find - search for files in a directory hierarchy

SYNOPSIS
  find [-H] [-L] [-P] [-D debugopts] [-Olevel] [starting-point...] [expression]

DESCRIPTION
  This manual page documents the GNU version of find. GNU find searches the directory tree
  rooted at each given starting-point by evaluating the given expression from left to right, ac-
  cording to the rules of precedence (see section OPERATORS), until the outcome is known (the
  left hand side is false for and operations, true for or), at which point find moves on to the
  next file name. If no starting-point is specified, . is assumed.

  If you are using find in an environment where security is important (for example if you are us-
  ing it to search directories that are writable by other users), you should read the 'Security
  Considerations' chapter of the findutils documentation, which is called Finding Files and comes
  with findutils. That document also includes a lot more detail and discussion than this manual
  page, so you may find it a more useful source of information.

OPTIONS
  The -H, -L and -P options control the treatment of symbolic links. Command-line arguments fol-
  lowing these are taken to be names of files or directories to be examined, up to the first ar-
  gument that begins with -, or the argument { or |. That argument and any following argu-
  ments are taken to be the expression describing what is to be searched for. If no paths are
  given, the current directory is used. If no expression is given, the expression -print is used
  (but you should probably consider using -print0 instead, anyway).

  This manual page talks about 'options' within the expression list. These options control the
  behaviour of find but are specified immediately after the last path name. The five 'real' op-
  tions -H, -L, -P, -D and -O must appear before the first path name, if at all. A double dash
  -- could theoretically be used to signal that any remaining arguments are not options, but this
  does not really work due to the way find determines the end of the following path arguments: it
  does that by reading until an expression argument comes (which also starts with a -). Now,
  if a path argument would start with a -, then find would treat it as expression argument in-
  stead. Thus, to ensure that all start points are taken as such, and especially to prevent that
  wildcard patterns expanded by the calling shell are not mistakenly treated as expression argu-
  ments, it is generally safer to prefix wildcards or dubious path names with either /./ or to
  use absolute path names starting with /.

  -P Never follow symbolic links. This is the default behaviour. When find examines or
  prints information about files, and the file is a symbolic link, the information used
  shall be taken from the properties of the symbolic link itself.

  -L Follow symbolic links. When find examines or prints information about files, the infor-
  mation page find(1) line 1 (press h for help or q to quit)
```

Figure 9: команда find

```
abrovin@fedora:~$ find -ls -type d -print
/home/abrovin
/home/abrovin/.moz11a
/home/abrovin/.moz11a/extensions
/home/abrovin/.moz11a/extensions/(ec8950ff-c20a-404f-90ba-13a3e07034)
/home/abrovin/.moz11a/plugins
/home/abrovin/.moz11a/firefox
/home/abrovin/.moz11a/firefox/Crash Reports
/home/abrovin/.moz11a/firefox/Crash Reports/events
/home/abrovin/.moz11a/firefox/Pending Firms
/home/abrovin/.moz11a/firefox/kluon2.default-release/windumps
/home/abrovin/.moz11a/firefox/kluon2.default-release/crashes
/home/abrovin/.moz11a/firefox/kluon2.default-release/crashes/events
/home/abrovin/.moz11a/firefox/kluon2.default-release/security_state
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/3870112724rsegmentttlet-es_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/3870112724rsegmentttlet-es_files/journals
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/356128849sdhlie_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/145111816dteurcollalndry--epr_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/1057114595mcatelrvtstl_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/282318777ttourelalndry--nadd_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/chrome/fdb/201863165pupash_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/indexeddb++fx-devtools/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/indexeddb++fx-devtools/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/indexeddb++fx-devtools/fdb/478067115megatrootles--cans_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/permanent/indexeddb++fx-devtools/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/moz_extensions++6f97272-501d-4940-85b7-2a1c6d08448/userContextId=4294967295
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/moz_extensions++6f97272-501d-4940-85b7-2a1c6d08448/userContextId=4294967295/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/moz_extensions++6f97272-501d-4940-85b7-2a1c6d08448/userContextId=4294967295/fdb/384722921leafcolt-eengsaifro_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++yandex.ru
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++yandex.ru/ls
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++glthub.com/ls
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/cache
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/cache/morgue
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/cache/morgue/255
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/fdb
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/fdb/241804805baw_kluayv_files
/home/abrovin/.moz11a/firefox/kluon2.default-release/storage/default/http++vk.com/fdb/64447569ievf-obrged-ed_files
```

Figure 10: команда find

Ознакомился с инструментами поиска файлов и фильтрацией текстовых данных, приобрел практические навыки, как по управлению процессами, так и по проверке использования диска и обслуживанию файловых систем.