

Лабораторная работа №6

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Цель работы

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.

Ход работы

Осуществляем вход в систему, используя соответствующее имя и пароль.

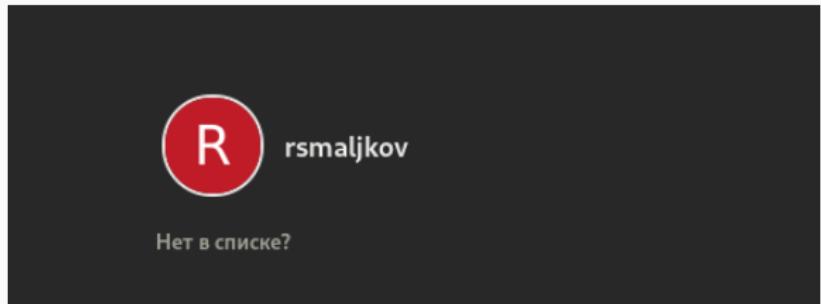


Рис. 1: Screenshot_20

Ход работы

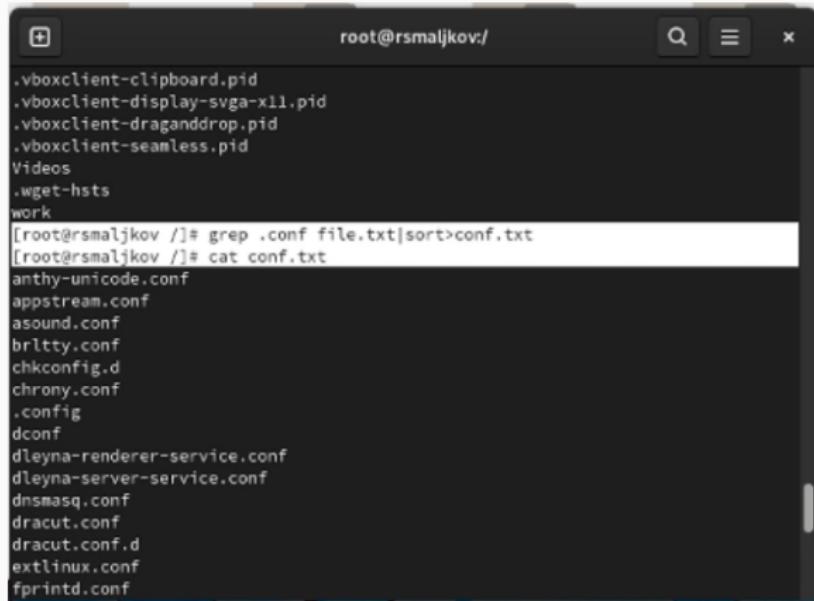
Записываем в файл file.txt названия файлов, содержащихся в каталоге /etc.

Дописываем в этот же файл названия файлов, содержащихся в вашем домашнем каталоге.

```
[rsmaljkov@rsmaljkov ~]$ ls -a /etc|sort>file.txt
bash: file.txt: Permission denied
[rsmaljkov@rsmaljkov ~]$ sudo -s
[sudo] password for rsmaljkov:
Sorry, try again.
[sudo] password for rsmaljkov:
[root@rsmaljkov ~]$ ls -a /etc|sort>file.txt
[root@rsmaljkov ~]$ ls -a /home/rsmaljkov|sort>>file.txt
[root@rsmaljkov ~]$ cat file.txt
.
..
abrt
adjtime
aliases
alsa
alternatives
anaconda
anthy-unicode.conf
appstream.conf
ascound.conf
audit
```

Ход работы

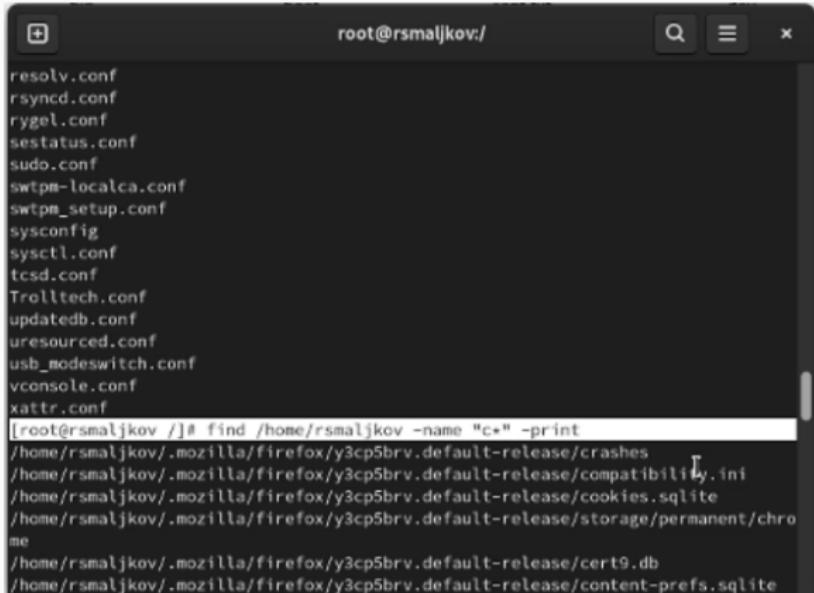
Выводим имена всех файлов из file.txt, имеющих расширение .conf, после чего записываем их в новый текстовой файл conf.txt.



```
root@rsmaljkov:/ 
.vboxclient-clipboard.pid
.vboxclient-display-svga-xll.pid
.vboxclient-draganddrop.pid
.vboxclient-seamless.pid
Videos
.wget-hsts
work
[root@rsmaljkov /]# grep .conf file.txt|sort>conf.txt
[root@rsmaljkov /]# cat conf.txt
anthy-unicode.conf
appstream.conf
asound.conf
brltty.conf
chkconfig.d
chrony.conf
.config
dconf
dleyna-renderer-service.conf
dleyna-server-service.conf
dnsmasq.conf
dracut.conf
dracut.conf.d
extlinux.conf
fprintd.conf
```

Ход работы

Определяем, какие файлы в нашем домашнем каталоге имеют имена, начинающиеся с символа с. Выполняем несколькими способами.



The screenshot shows a terminal window with the following content:

```
root@rsmaljkov:/home/rsmaljkov# find . -name "c*" -print
./.mozilla/firefox/y3cp5brv.default-release/crashes
./.mozilla/firefox/y3cp5brv.default-release/compatibility.ini
./.mozilla/firefox/y3cp5brv.default-release/cookies.sqlite
./.mozilla/firefox/y3cp5brv.default-release/storage/permanent/chrome
./.mozilla/firefox/y3cp5brv.default-release/cert9.db
./.mozilla/firefox/y3cp5brv.default-release/content-prefs.sqlite
```

Ход работы

```
```
placeimg_800_600_tech.jpg

/home/rsmaljkov/work/study/2021-2022/OperatingSystems/study_2021-2022_os-intro/t
emplate/report/report/pandoc:
```
```
esl

/home/rsmaljkov/work/study/2021-2022/OperatingSystems/study_2021-2022_os-intro/t
emplate/report/report/pandoc/esl;
```
```
gost-r-7-0-5-2008-numeric.esl

/home/rsmaljkov/work/study/2021-2022/OperatingSystems/study_2021-2022_os-intro/t
emplate/report/scripts:
```
```
image-report
mpv-shot
[root@rsmaljkov /]# ls -aR /home/rsmaljkov|grep "*c"
```

Рис. 5: Screenshot \_4

# Ход работы

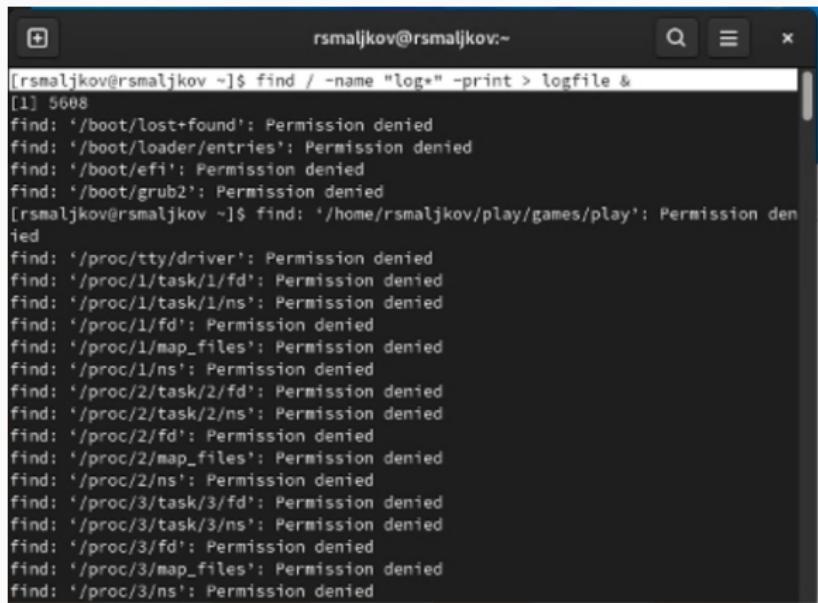
Выводим на экран имена файлов из каталога /etc, начинающиеся с символа h.

```
[root@rsmaljkov /]# find /etc -name "*h" -print
/etc/X11/xinit/xinitrc.d/50-systemd-user.sh
/etc/X11/xinit/xinitrc.d/localuser.sh
/etc/X11/xinit/xinitrc.d/00-start-message-bus.sh
/etc/X11/xinit/xinitrc.d/10-qt5-check-opengl2.sh
/etc/X11/xinit/xinitrc.d/98vboxadd-xclient.sh
/etc/authselect/system-auth
/etc/authselect/password-auth
/etc/authselect/fingerprint-auth
/etc/authselect/smartcard-auth
/etc/bash_completion.d/authselect-completion.sh
/etc/bluetooth
/etc/ceph
/etc/dhcp/dhclient.d/chrony.sh
/etc/libssh
```

Рис. 6: Screenshot\_21

# Ход работы

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



The screenshot shows a terminal window with the title bar "rsmaljkov@rsmaljkov:~". The command entered is "find / -name "log\*" -print > logfile &". The output shows numerous "Permission denied" errors for various system files and directories, such as "/boot/lost+found", "/boot/loader/entries", and various entries in "/proc".

```
[rsmaljkov@rsmaljkov ~]$ find / -name "log*" -print > logfile &
[1] 5608
find: '/boot/lost+found': Permission denied
find: '/boot/loader/entries': Permission denied
find: '/boot/efi': Permission denied
find: '/boot/grub2': Permission denied
[rsmaljkov@rsmaljkov ~]$ find: '/home/rsmaljkov/play/games/play': Permission denied
find: '/proc/tty/driver': Permission denied
find: '/proc/1/task/1/fd': Permission denied
find: '/proc/1/task/1/ns': Permission denied
find: '/proc/1/fd': Permission denied
find: '/proc/1/map_files': Permission denied
find: '/proc/1/ns': Permission denied
find: '/proc/2/task/2/fd': Permission denied
find: '/proc/2/task/2/ns': Permission denied
find: '/proc/2/fd': Permission denied
find: '/proc/2/map_files': Permission denied
find: '/proc/2/ns': Permission denied
find: '/proc/3/task/3/fd': Permission denied
find: '/proc/3/task/3/ns': Permission denied
find: '/proc/3/fd': Permission denied
find: '/proc/3/map_files': Permission denied
find: '/proc/3/ns': Permission denied
```

# Ход работы

Удаляем файл `~/logfile`(Скриншот 8).

```
[rsmaljkov@rsmaljkov ~]$ rm -f logfile
[rsmaljkov@rsmaljkov ~]$
```

Рис. 8: Screenshot\_10

# Ход работы

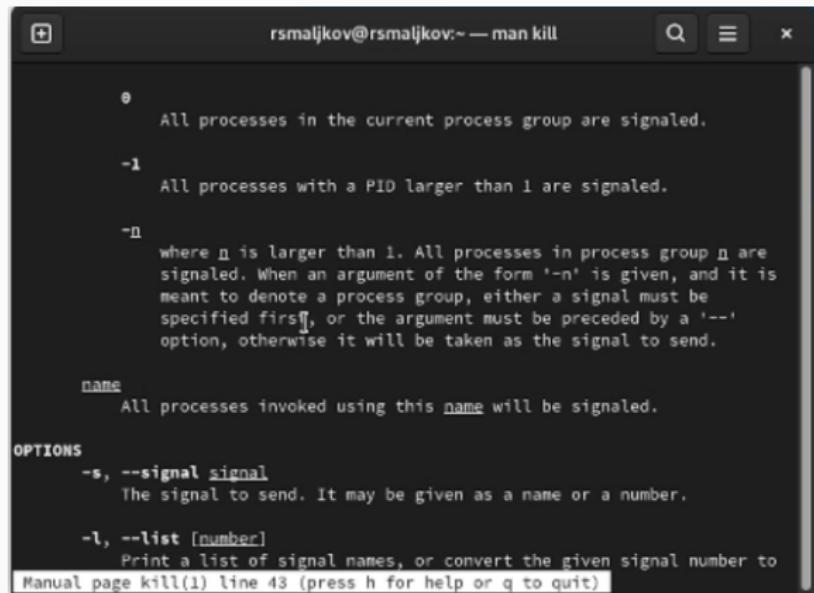
Запускаем из консоли в фоновом режиме редактор gedit. Определяем идентификатор процесса gedit, используя команду ps, конвейер и фильтр grep.

```
[rsmaljkov@rsmaljkov ~]$ gedit &
[1] 5864
[rsmaljkov@rsmaljkov ~]$ ps aux|grep gedit
rsmaljk+ 5864 0.5 3.0 777892 60708 pts/l Sl 12:48 0:00 gedit
rsmaljk+ 5945 0.0 0.1 221668 2300 pts/l S+ 12:49 0:00 grep --color=
auto gedit
[rsmaljkov@rsmaljkov ~]$
```

Рис. 9: Screenshot\_11

# Ход работы

Читаем справку (man) команды kill, после чего используем её для завершения процесса gedit.



The screenshot shows a terminal window with the command `rsmaljkov@rsmaljkov:~ — man kill` entered at the prompt. The man page for the `kill` command is displayed, listing various options and their descriptions:

- 0**  
All processes in the current process group are signaled.
- 1**  
All processes with a PID larger than 1 are signaled.
- n**  
where  $n$  is larger than 1. All processes in process group  $n$  are signaled. When an argument of the form ' $-n$ ' is given, and it is meant to denote a process group, either a signal must be specified first, or the argument must be preceded by a '--' option, otherwise it will be taken as the signal to send.
- name**  
All processes invoked using this name will be signaled.

**OPTIONS**

- s, --signal signal**  
The signal to send. It may be given as a name or a number.
- l, --list [number]**  
Print a list of signal names, or convert the given signal number to

Manual page `kill(1)` line 43 (press h for help or q to quit)

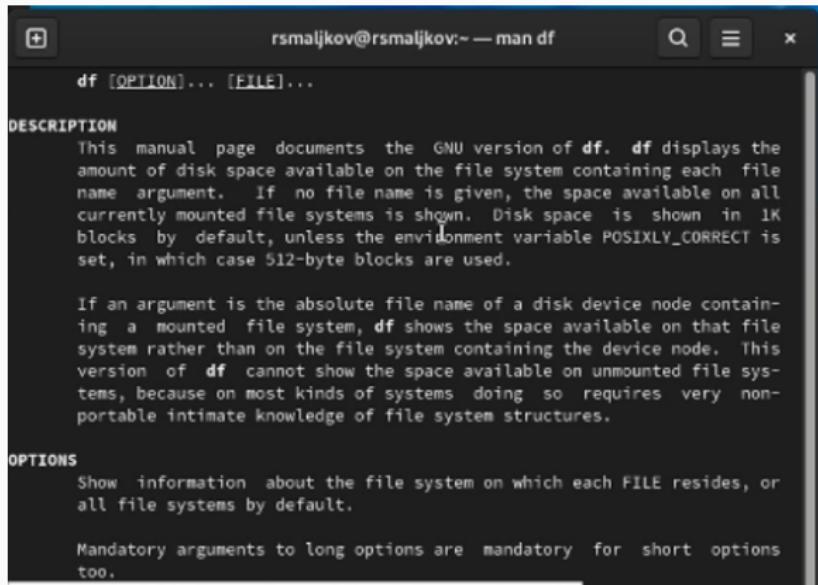
# Ход работы

```
[rsmaljkov@rsmaljkov ~]$ gedit &
[1] 5864
[rsmaljkov@rsmaljkov ~]$ ps aux|grep gedit
rsmaljk+ 5864 0.5 3.0 777892 60708 pts/l Sl 12:48 0:00 gedit
rsmaljk+ 5945 0.0 0.1 221668 2300 pts/l S+ 12:49 0:00 grep --color=
auto gedit
[rsmaljkov@rsmaljkov ~]$ man kill
[rsmaljkov@rsmaljkov ~]$ kill 5945
bash: kill: (5945) - No such process
[rsmaljkov@rsmaljkov ~]$ kill 5864
[1]+ Terminated gedit
[rsmaljkov@rsmaljkov ~]$
```

Рис. 11: Screenshot\_13

# Ход работы

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



The screenshot shows a terminal window with the command `man df` entered. The window has a title bar with the user's name and the command. Below the title bar is a search bar and some window control icons. The main area of the terminal displays the man page for `df`. It includes sections for DESCRIPTION and OPTIONS, along with detailed explanations of each.

```
rsmaлиjkov@rsmaлиjkov:~ — man df
Q x
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 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.

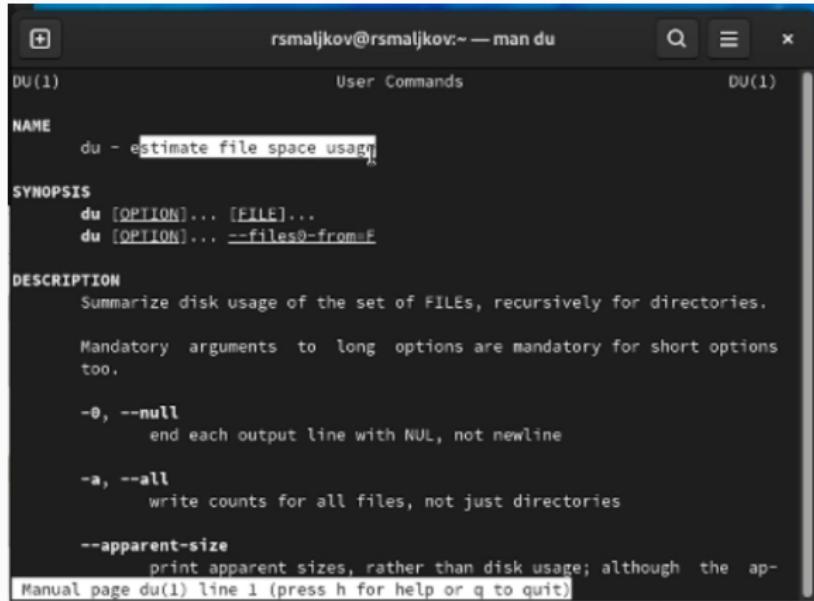
Mandatory arguments to long options are mandatory for short options too.
```

# Ход работы

```
[rsmaljkov@rsmaljkov ~]$ df
Filesystem 1K-blocks Used Available Use% Mounted on
devtmpfs 4096 0 4096 0% /dev
tmpfs 1010444 0 1010444 0% /dev/shm
tmpfs 404180 1364 402816 1% /run
/dev/sda2 82836480 5532760 75639800 7% /
tmpfs 1010444 452 1009992 1% /tmp
/dev/sda2 82836480 5532760 75639800 7% /home
/dev/sdal 996780 222952 705016 25% /boot
files 153561084 17496648 136064436 12% /media/sf_files
tmpfs 202088 148 201940 1% /run/user/1000
[rsmaljkov@rsmaljkov ~]$
```

Рис. 13: Screenshot\_15

# Ход работы



The screenshot shows a terminal window with the command `man du` running. The window title is "User Commands". The man page for `du` is displayed, starting with the NAME section. The synopsis shows two forms of the command: `du [OPTION]... [FILE]...` and `du [OPTION]... --files0-from=FILE`. The DESCRIPTION section explains that it summarizes disk usage for a set of files recursively. It also notes that mandatory arguments for long options are also mandatory for short options. The -0 option is described as ending each output line with NUL instead of newline. The -a option is described as writing counts for all files, not just directories. The --apparent-size option is described as printing apparent sizes instead of disk usage. A footer at the bottom of the man page says "Manual page du(1) line 1 (press h for help or q to quit)".

Рис. 14: Screenshot\_16

# Ход работы

```
[rsmaljkov@rsmaljkov ~]$ du
0 ./mozilla/extensions/{ec8030f7-c20a-464f-9b0e-13a3a9e97384}
0 ./mozilla/extensions
0 ./mozilla/plugins
0 ./mozilla/firefox/Crash Reports/events
0 ./mozilla/firefox/Crash Reports
0 ./mozilla/firefox/Pending Pings
0 ./mozilla/firefox/y3cp5brv.default-release/minidumps
0 ./mozilla/firefox/y3cp5brv.default-release/crashes/events
4 ./mozilla/firefox/y3cp5brv.default-release/crashes
```

Рис. 15: Screenshot \_17

# Ход работы

Воспользовавшись справкой команды `find`, выводим имена всех директорий, имеющихся в вашем домашнем каталоге.

```
rsmaljkov@rsmaljkov:~ — man find

File's status was last changed less than, more than or exactly n
minutes ago.

-cnewer reference
 Time of the last status change of the current file is more re-
 cent than that of the last data modification of the reference
 file. If reference is a symbolic link and the -H option or the
 -L option is in effect, then the time of the last data modifica-
 tion of the file it points to is always used.

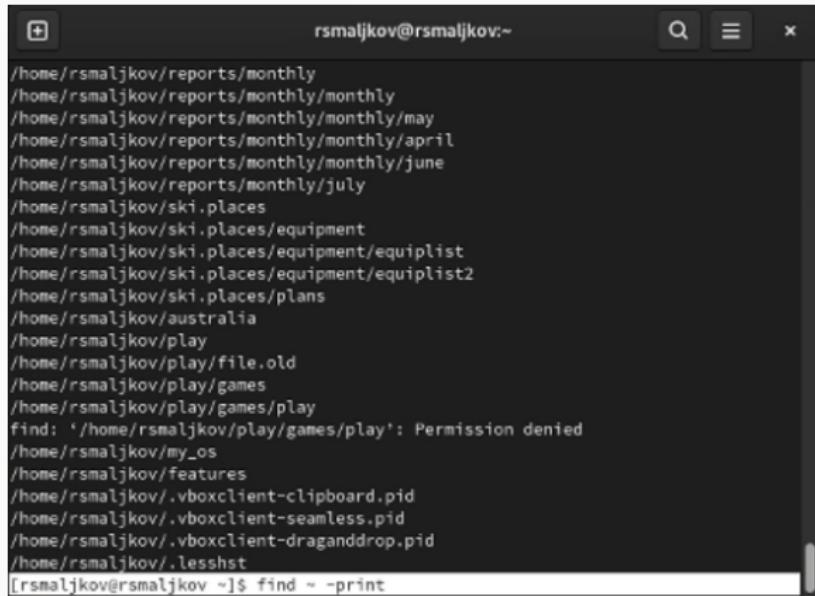
-ctime n
 File's status was last changed less than, more than or exactly
 n+24 hours ago. See the comments for -atime to understand how
 rounding affects the interpretation of file status change times.

-empty File is empty and is either a regular file or a directory.

-executable
 Matches files which are executable and directories which are
 searchable (in a file name resolution sense) by the current
 user. This takes into account access control lists and other
 permissions artefacts which the -perm test ignores. This test
 makes use of the access(2) system call, and so can be fooled by

Manual page find(1) line 400 (press h for help or q to quit)
```

# Ход работы



```
rsmaljkov@rsmaljkov:~
```

```
/home/rsmaljkov/reports/monthly
/home/rsmaljkov/reports/monthly/monthly
/home/rsmaljkov/reports/monthly/monthly/may
/home/rsmaljkov/reports/monthly/monthly/april
/home/rsmaljkov/reports/monthly/monthly/june
/home/rsmaljkov/reports/monthly/july
/home/rsmaljkov/ski.places
/home/rsmaljkov/ski.places/equipment
/home/rsmaljkov/ski.places/equipment/equiplist
/home/rsmaljkov/ski.places/equipment/equiplist2
/home/rsmaljkov/ski.places/plans
/home/rsmaljkov/australia
/home/rsmaljkov/play
/home/rsmaljkov/play/file.old
/home/rsmaljkov/play/games
/home/rsmaljkov/play/games/play
find: '/home/rsmaljkov/play/games/play': Permission denied
/home/rsmaljkov/my_os
/home/rsmaljkov/features
/home/rsmaljkov/.vboxclient-clipboard.pid
/home/rsmaljkov/.vboxclient-seamless.pid
/home/rsmaljkov/.vboxclient-draganddrop.pid
/home/rsmaljkov/.lessht
[rsmaljkov@rsmaljkov ~]$ find ~ -print
```

Рис. 17: Screenshot\_19

## Вывод

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Мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. Приобрели практические навыки: по управлению процессами (и заданиями), по проверке использования диска и обслуживанию файловых систем.