

# Лабораторная работа №6

## Основы интерфейса взаимодействия пользователя с системой Unix на уровне командной строки

Прозорова Елизавета Евгеньевна

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## 1 Цель работы

Приобретение практических навыков взаимодействия пользователя с системой посредством командной строки.

## 2 Выполнение лабораторной работы

1. Я определила имя домашнего каталога через Thunar.

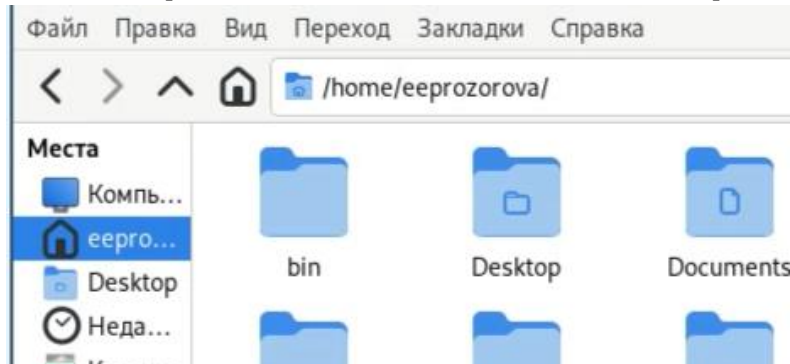


Рис. 1: Домашний каталог

2. Я перешла в каталог /tmp/ и вывела его содержимое с помощью ls. с различными опциями.

```

[eeprozorova@eeprozorova /]$ cd /tmp
[eeprozorova@eeprozorova tmp]$ ls
sddm-auth-14999f7b-d66c-4a9b-bf86-9e726f582c81
sddm--KbTSyC
systemd-private-c53c6482c1c849b5b6c622a86f80a091-abrt.service-1cQUaW
systemd-private-c53c6482c1c849b5b6c622a86f80a091-chronyd.service-iTCr01
systemd-private-c53c6482c1c849b5b6c622a86f80a091-dbus-broker.service-tpiITD
systemd-private-c53c6482c1c849b5b6c622a86f80a091-ModemManager.service-hXi2dH
systemd-private-c53c6482c1c849b5b6c622a86f80a091-polkit.service-h8F1Pg
systemd-private-c53c6482c1c849b5b6c622a86f80a091-rtkit-daemon.service-FaYRV5
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-logind.service-vl5MYK
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-oomd.service-YQs6cR
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-resolved.service-H5fYnH
systemd-private-c53c6482c1c849b5b6c622a86f80a091-upower.service-M5aVo8
[eeprozorova@eeprozorova tmp]$ ls -a
.
..
.font-unix
.ICE-unix
sddm-auth-14999f7b-d66c-4a9b-bf86-9e726f582c81
sddm--KbTSyC
systemd-private-c53c6482c1c849b5b6c622a86f80a091-abrt.service-1cQUaW
systemd-private-c53c6482c1c849b5b6c622a86f80a091-chronyd.service-iTCr01
systemd-private-c53c6482c1c849b5b6c622a86f80a091-dbus-broker.service-tpiITD
systemd-private-c53c6482c1c849b5b6c622a86f80a091-ModemManager.service-hXi2dH
systemd-private-c53c6482c1c849b5b6c622a86f80a091-polkit.service-h8F1Pg
systemd-private-c53c6482c1c849b5b6c622a86f80a091-rtkit-daemon.service-FaYRV5
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-logind.service-vl5MYK
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-oomd.service-YQs6cR
systemd-private-c53c6482c1c849b5b6c622a86f80a091-systemd-resolved.service-H5fYnH
systemd-private-c53c6482c1c849b5b6c622a86f80a091-upower.service-M5aVo8
.X0-lock
.XT1-unix
.XT1-unix
[eeprozorova@eeprozorova tmp]$ ls

```

Рис. 2: Содержимое каталога tmp

Затем я перешла в каталог /var/spool чтобы посмотреть есть ли там подкаталог с именем cron. Он есть.

```

[eeprozorova@eeprozorova /]$ cd /var/spool
[eeprozorova@eeprozorova spool]$ ls
abrt abrt-upload anacron at cron cups lpd mail plymouth
[eeprozorova@eeprozorova spool]$

```

Рис. 3: Каталог var/spool с подкаталогом cron

3. В домашнем каталоге создала новый каталог с именем newdir, в котором создала новый каталог с именем morefun.

```

[eeprozorova@eeprozorova ~]$ mkdir newdir
[eeprozorova@eeprozorova ~]$ cd ~/newdir
[eeprozorova@eeprozorova newdir]$ mkdir morefun
[eeprozorova@eeprozorova newdir]$

```

Рис. 4: Каталог newdir и morefun

В домашнем каталоге создала одной командой три новых каталога с именами letters, memos, misk. Затем удалила эти каталоги одной командой.

```

[eeprozorova@eeprozorova ~]$ mkdir letters memos misk
[eeprozorova@eeprozorova ~]$ rmdir letters memos misk
[eeprozorova@eeprozorova ~]$

```

Рис. 5: Каталоги с именами letters, memos, misk

Затем я попробовала удалить `newdir` командой `rm`, у меня не получилось. Тогда я попробовала `rmdir`, тоже не получилось. После этого я использовала команду `rm -r`, она сработала.

```
[eeprozorova@eeprozorova ~]$ rm newdir
rm: невозможно удалить 'newdir': Это каталог
[eeprozorova@eeprozorova ~]$ rmdir newdir
rmdir: не удалось удалить 'newdir': Каталог не пуст
[eeprozorova@eeprozorova ~]$ rm -r newdir
[eeprozorova@eeprozorova ~]$
```

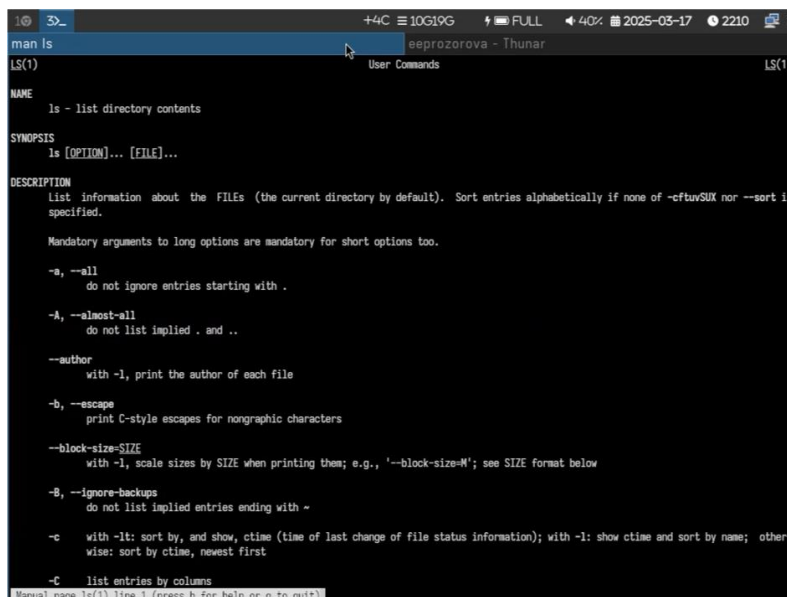
Рис. 6: Удаление `newdir`

4. Теперь я ввела команду `man`.

```
[eeprozorova@eeprozorova ~]$ man
Какая справочная страница вам нужна?
Например, попробуйте ввести «man man».
[eeprozorova@eeprozorova ~]$ man man
man: не удалось определить man7/groff_man.7
[eeprozorova@eeprozorova ~]$ man ls
```

Рис. 7: Команда `man`

Команда `man` на `ls`.



```
10 30_ +4C 10G19G FULL 40% 2025-03-17 2210
man ls eeprozorova - Thunar
ls(1) User Commands ls(1)
NAME
ls - list directory contents
SYNOPSIS
ls [OPTION]... [FILE]...
DESCRIPTION
List information about the FILES (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is
specified.

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

-a, --all
do not ignore entries starting with .

-A, --almost-all
do not list implied . and ..

--author
with -l, print the author of each file

-b, --escape
print C-style escapes for nongraphic characters

--block-size=SIZE
with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

-B, --ignore-backups
do not list implied entries ending with ~

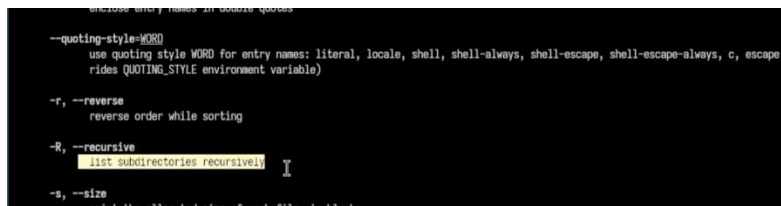
-c with -lt: sort by, and show, ctime (time of last change of file status information); with -l: show ctime and sort by name; other-
wise: sort by ctime, newest first

-C list entries by columns

Manual case ls(1) line 1 (press h for help or q to quit)
```

Рис. 8: Внутренности `ls`

Я определила опцию команды `ls`, которую нужно использовать для просмотра содержимое не только указанного каталога, но и подкаталогов, входящих в него.



```
enclose entry names in double quotes

--quoting-style=WORD
use quoting style WORD for entry names: literal, locale, shell, shell-always, shell-escape, shell-escape-always, c, escape
rides QUOTING_STYLE environment variable

-r, --reverse
reverse order while sorting

-R, --recursive
list subdirectories recursively

-s, --size
print the allocated size of each file, in blocks
```

Рис. 9: Опция `ls`

5. Затем я определила набор опций команды `ls`, позволяющий отсортировать по времени последнего изменения выводимый список содержимого каталога с развёрнутым описанием файлов.

```
with -l, WORD determines which time to show; with --sort=time, sort by WORD (newest first)

--time-style=TIME_STYLE
time/date format with -l; see TIME_STYLE below

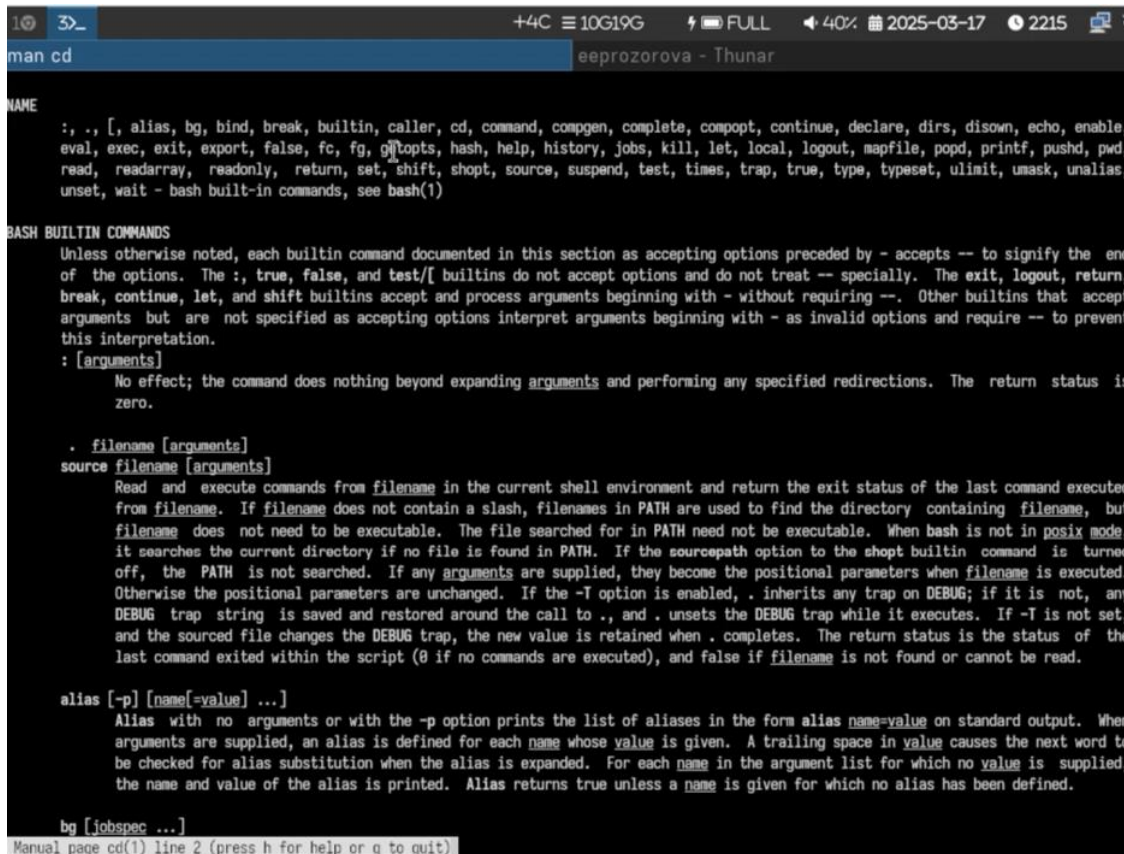
-t Sort by time, newest first; see --time

-T, --tabsize=COLS
assume tab stops at each COLS instead of 8

-u with -lt: sort by, and show, access time; with -l: show access time and sort by name; otherwise: sort by access time, newest first
```

Рис. 10: Опция команды `ls` для сортировки содержимого каталога по времени

6. Я использовала команду `man` для просмотра описания команды `cd`.



```
man cd
eeprozorova - Thunar

NAME
:, ., [, alias, bg, bind, break, builtin, caller, cd, command, compgen, complete, compopt, continue, declare, dirs, disown, echo, enable, eval, exec, exit, export, false, fc, fg, gftopts, hash, help, history, jobs, kill, let, local, logout, mapfile, popd, printf, pushd, pwd, read, readarray, readonly, return, set, shift, shopt, source, suspend, test, times, trap, true, type, typeset, ulimit, umask, unalias, unset, wait - bash built-in commands, see bash(1)

BASH BUILTIN COMMANDS
Unless otherwise noted, each builtin command documented in this section as accepting options preceded by - accepts -- to signify the end of the options. The :, true, false, and test/[ builtins do not accept options and do not treat -- specially. The exit, logout, return, break, continue, let, and shift builtins accept and process arguments beginning with - without requiring --. Other builtins that accept arguments but are not specified as accepting options interpret arguments beginning with - as invalid options and require -- to prevent this interpretation.
: [arguments]
No effect; the command does nothing beyond expanding arguments and performing any specified redirections. The return status is zero.

. filename [arguments]
source filename [arguments]
Read and execute commands from filename in the current shell environment and return the exit status of the last command executed from filename. If filename does not contain a slash, filenames in PATH are used to find the directory containing filename, but filename does not need to be executable. The file searched for in PATH need not be executable. When bash is not in posix mode, it searches the current directory if no file is found in PATH. If the sourcepath option to the shopt builtin command is turned off, the PATH is not searched. If any arguments are supplied, they become the positional parameters when filename is executed. Otherwise the positional parameters are unchanged. If the -I option is enabled, . inherits any trap on DEBUG; if it is not, any DEBUG trap string is saved and restored around the call to ., and . unsets the DEBUG trap while it executes. If -I is not set, and the sourced file changes the DEBUG trap, the new value is retained when . completes. The return status is the status of the last command exited within the script (0 if no commands are executed), and false if filename is not found or cannot be read.

alias [-p] [name=value] ...]
Alias with no arguments or with the -p option prints the list of aliases in the form alias name=value on standard output. When arguments are supplied, an alias is defined for each name whose value is given. A trailing space in value causes the next word to be checked for alias substitution when the alias is expanded. For each name in the argument list for which no value is supplied, the name and value of the alias is printed. Alias returns true unless a name is given for which no alias has been defined.

bg [jobspec ...]

Manual page cd(1) line 2 (press h for help or q to quit)
```

{#fig:011 width=70%}

Просмотр описания команды `pwd`.

```
man pwd
PWD(1)
NAME
    pwd - print name of current/working directory
SYNOPSIS
    pwd [OPTION]...
DESCRIPTION
    Print the full filename of the current working directory.

    -L, --logical
        use PWD from environment, even if it contains symlinks

    -P, --physical
        avoid all symlinks

    --help
        display this help and exit

    --version
        output version information and exit

    If no option is specified, -P is assumed.

    Your shell may have its own version of pwd, which usually supersedes the version described here. Please refer to your shell's documentation for details about the options it supports.
AUTHOR
    Written by Jim Meyering.
REPORTING BUGS
    GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
    Report any translation bugs to <https://translationproject.org/team/>
COPYRIGHT
    Copyright © 2024 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
Manual page pwd(1) line 1 (press h for help or q to quit)
```

Рис. 11: Описание pwd

Просмотр описания команды mkdir.

```
man mkdir
MKDIR(1)
NAME
    mkdir - make directories
SYNOPSIS
    mkdir [OPTION]... DIRECTORY...
DESCRIPTION
    Create the DIRECTORY(ies), if they do not already exist.

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

    -m, --mode=MODE
        set file mode (as in chmod), not a-rwx - umask

    -p, --parents
        no error if existing, make parent directories as needed, with their file modes unaffected by any -m option.

    -v, --verbose
        print a message for each created directory

    -Z
        set SELinux security context of each created directory to the default type

    --context[=CTX]
        like -Z, or if CTX is specified then set the SELinux or SMACK security context to CTX

    --help
        display this help and exit

    --version
        output version information and exit
AUTHOR
    Written by David MacKenzie.
REPORTING BUGS
```

Рис. 12: Описание mkdir

Просмотр описания команды rm.

```
man rm
rm(1)
NAME
rm - remove files or directories
SYNOPSIS
rm [OPTION]... [FILE]...
DESCRIPTION
This manual page documents the GNU version of rm. rm removes each specified file. By default, it does not remove directories.
If the -i or --interactive=once option is given, and there are more than three files or the -r, -R, or --recursive are given, then rm
prompts the user for whether to proceed with the entire operation. If the response is not affirmative, the entire command is aborted.
Otherwise, if a file is unwritable, standard input is a terminal, and the -f or --force option is not given, or the -i or --interac-
tive=always option is given, rm prompts the user for whether to remove the file. If the response is not affirmative, the file is
skipped.
OPTIONS
Remove (unlink) the FILE(s).
-f, --force
ignore nonexistent files and arguments, never prompt
-i
prompt before every removal
-I
prompt once before removing more than three files, or when removing recursively; less intrusive than -i, while still giving pro-
tection against most mistakes
--interactive[=WHEN]
prompt according to WHEN: never, once (-i), or always (-I); without WHEN, prompt always
--one-file-system
when removing a hierarchy recursively, skip any directory that is on a file system different from that of the corresponding com-
mand line argument
Manual page rm(1) line 3. Press h for help or q to quit
```

Рис. 13: Описание rm

7. Затем я посмотрела что делает команда history.

```
226 cd /tmp
227 ls
228 ls -a
229 ls -alf
230 cd
231 cd /
232 cd var/spool
233 ls
234 cd
235 ls
236 mkdir newdir
237 cd ~/newdir
238 mkdir morefun
239 cd
240 mkdir letters memos misk
241 rmdir letters memos misk
242 rm newdir
243 rmdir newdir
244 rm -r newdir
245 man
246 man man
247 man ls
248 man cd
249 man pwd
250 man mkdir
251 man rmdir
252 man rm
253 history
[eeprozorova@eeprozorova ~]$
```

Рис. 14: History

## 3 Выводы

В ходе работы я приобрела навыки работы с системой посредством командной строки.