

Лабораторная работа №5.

Саакян нерсес Варданович

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Российский университет дружбы народов, Москва, Россия

Цели и задачи работы

Приобретение практических навыков взаимодействия пользователя с системой посредством командной строки

Процесс выполнения лабораторной работы

Определим полное имя вашего домашнего каталога.

```
nvsaakyan@dk8n81 ~ $ cd  
nvsaakyan@dk8n81 ~ $ pwd  
/afs/.dk.sci.pfu.edu.ru/home/n/v/nvsaakyan
```

Рис. 1: Имя домашнего каталога

Перейдём в каталог /tmp

```
nvsaakyan@dk8n81 ~ $ cd /tmp
```

Рис. 2: Переход в каталог /tmp

Выведем на экран содержимое каталога /tmp с помощью команды ls

```
nvsaaakyan@dk8n81 /tmp $ ls
krb5cc_5521_AbhtbV
krb5cc_5521_zRrK7a
nvsaaakyan
portage
pulse-PKdhtXMmr18n
root
screen
sddm-:0-wujNdy
sddm-auth-131c3649-99cf-4ece-a054-8641c7d6ce67
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-color.service-sDWOG9
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-polkit.service-F5uqoS
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-power-profiles-daemon.service-j3oSTk
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-logind.service-umlh0l
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-resolved.service-no9MaP
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-timesyncd.service-QcJKq7
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-upower.service-IRLKd1
Temp-8919f53b-cb9f-4adf-8f9b-8a35f8f7e2fd
tmux-0
```

Рис. 3: ls

Сравним команды ls -a и ls -F

```
nvsaakyan@dk8n81 /tmp $ ls -a
```

```
..  
ICE-unix  
krb5cc_5521_AbhtbV  
krb5cc_5521_zRrK7a  
nvsaakyan  
portage  
pulse-PKdhtXMmr18n  
root  
screen  
sddm-:0-wujNdy  
sddm-auth-131c3649-99cf-4ece-a054-8641c7d6ce67  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-color.service-sDWOG9  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-polkit.service-F5uqoS  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-power-profiles-daemon.service-j3oStk  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-logind.service-umlh01  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-resolved.service-no9MaP  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-timesyncd.service-QcJKq7  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-upower.service-IRLKd1  
Temp-8919f53b-cb9f-4adf-8f9b-8a35f8f7e2fd  
tmux-0  
X11-unix  
.X1-lock  
.X2-lock
```

```
nvsaakyan@dk8n81 /tmp $ ls -F
```

```
krb5cc_5521_AbhtbV  
krb5cc_5521_zRrK7a  
nvsaakyan/  
portage/  
pulse-PKdhtXMmr18n/  
root/  
screen/  
sddm-:0-wujNdy=  
sddm-auth-131c3649-99cf-4ece-a054-8641c7d6ce67=  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-color.service-sDWOG9/  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-polkit.service-F5uqoS/  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-power-profiles-daemon.service-j3oStk/  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-logind.service-umlh01/  
systemd-private-0d4c73edc8e34be186c930e146bc4aa8-systemd-resolved.service-no9MaP/  
Temp-8919f53b-cb9f-4adf-8f9b-8a35f8f7e2fd  
tmux-0  
X11-unix  
.X1-lock  
.X2-lock
```


Переходим в домашний каталог

```
nvsaakyan@dk8n81 /tmp $ cd  
nvsaakyan@dk8n81 ~ $ ls  
bin      public    work      Документы  Изображения  Общедоступные  Шаблоны  
main.cpp public_html Видео      Загрузки   Музыка       'Рабочий стол'
```

Рис. 5: Домашний каталог

Определим, кто является владельцем файлов и подкаталогов с помощью команды `ls -l`

```
nvsaakyan@dk8n81 ~ $ ls -l
итого 26
drwxr-xr-x 2 nvsaakyan studsci 2048 фев 27 17:24 bin
-rw-r--r-- 1 nvsaakyan studsci 85 фев 8 14:11 main.cpp
drwxr-xr-x 3 nvsaakyan root 2048 сен 5 17:45 public
lrwxr-xr-x 1 nvsaakyan root 18 фев 16 07:02 public_html -> public/public_html
drwxr-xr-x 5 nvsaakyan studsci 2048 фев 27 17:41 work
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 Видео
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 Документы
drwxr-xr-x 3 nvsaakyan studsci 4096 фев 29 12:09 Загрузки
drwxr-xr-x 3 nvsaakyan studsci 2048 фев 22 12:23 Изображения
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 Музыка
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 Общедоступные
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 'Рабочий стол'
drwxr-xr-x 2 nvsaakyan studsci 2048 сен 7 09:16 Шаблоны
```

Рис. 6: Имя домашнего каталога

В домашнем каталоге создаём новый каталог с именем newdir.

```
nvsaakyan@dk8n81 ~ $ mkdir newdir
nvsaakyan@dk8n81 ~ $ ls
bin      newdir  public_html  Видео      Загрузки    Музыка      'Рабочий стол'
main.cpp public  work         Документы  Изображения  Общедоступные  Шаблоны
```

Рис. 7: Создание каталога newdir

В каталоге `~/newdir` создаём новый каталог с именем `morefun`.

```
nvsaakyan@dk8n81 ~ $ cd newdir
nvsaakyan@dk8n81 ~/newdir $ mkdir morefun
nvsaakyan@dk8n81 ~/newdir $ ls
morefun
nvsaakyan@dk8n81 ~/newdir $ mkdir letters memos misk
nvsaakyan@dk8n81 ~/newdir $ ls
letters memos misk morefun
```

Рис. 8: Создание каталога `morefun`

Создаём одной командой три новых каталога с именами

```
nvsaakyan@dk8n81 ~ $ rm -r newdir
nvsaakyan@dk8n81 ~ $ ls
bin      public   work     Документы  Изображения  Общедоступные  Шаблоны
main.cpp public_html Видео     Загрузки   Музыка       'Рабочий стол'
```

Рис. 9: Создание каталогов и их удаление

```
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 in-
        formation); with -l: show ctime and sort by name; otherwise: sort by ctime,
        newest first

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

Рис. 10: Команда man ls

use quoting style WORD for entry names: literal, locale, shell, shell-always, shell-escape, shell-escape-always, c, escape (overrides 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

`-S` sort by file size, largest first

`--sort=WORD`
sort by WORD instead of name: none (`-U`), size (`-S`), time (`-t`), version (`-v`), extension (`-X`), width

`--time=WORD`
select which timestamp used to display or sort; access time (`-u`): atime, access, use; metadata change time (`-c`): ctime, status; modified time (default): mtime, modification; birth time: birth, creation;

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

Manual page ls(1) line 134/238 71% (press h for help or q to quit)

Рис. 11: -R, --recursive

sort by WORD instead of name: none (-U), size (-S), time (-t), version (-v), extension (-X), width

--time=WORD

select which timestamp used to display or sort; access time (-u): atime, access, use; metadata change time (-c): ctime, status; modified time (default): mtime, modification; birth time: birth, creation;

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

-U do not sort; list entries in directory order

-v natural sort of (version) numbers within text

-w, --width=COLS

set output width to COLS. 0 means no limit

-x list entries by lines instead of by columns

-X sort alphabetically by entry extension

-Z, --context

print any security context of each file

--zero end each output line with NUL, not newline

Manual page ls(1) line 150/238 76% (press h for help or q to quit)

Рис. 12: --time-style=TIME_STYLE

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

cd - change the working directory

SYNOPSIS

cd [-L|-P] [*directory*]

cd -

DESCRIPTION

The `cd` utility shall change the working directory of the current shell execution environment (see [Section 2.12, Shell Execution Environment](#)) by executing the following steps in sequence. (In the following steps, the symbol `curpath` represents an intermediate value used to simplify the description of the algorithm used by `cd`. There is no requirement that `curpath` be made visible to the application.)

1. If no `directory` operand is given and the `HOME` environment variable is empty or undefined, the default behavior is implementation-defined and no further steps shall be taken.
2. If no `directory` operand is given and the `HOME` environment variable is set to a non-empty value, the `cd` utility shall behave as if the directory named in the `HOME` environment variable was specified as the `directory` operand.
3. If the `directory` operand begins with a <slash> character, set `curpath` to the operand and proceed to step 7.
4. If the first component of the `directory` operand is dot or dot-dot, proceed to step 6.
5. Starting with the first pathname in the <colon>-separated pathnames of `CDPATH`

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

Рис. 13: Команда man cd

```
PWD(1)                                User Commands                                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.

    NOTE: your shell may have its own version of pwd, which usually supersedes the ver-
    sion 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/>

SEE ALSO
    getcwd(3)

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

Рис. 14: Команда man pwd

```
mkDIR(1)                                User Commands                                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 con-
        text to CTX

    --help
        display this help and exit

    --version
        output version information and exit

AUTHOR
    Written by David MacKenzie.

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

Рис. 15: Команда man mkdir

```
RMDIR(1)                                User Commands                                RMDIR(1)

NAME
    rmdir - remove empty directories

SYNOPSIS
    rmdir [OPTION]... DIRECTORY...

DESCRIPTION
    Remove the DIRECTORY(ies), if they are empty.

    --ignore-fail-on-non-empty
        ignore each failure to remove a non-empty directory

    -p, --parents
        remove DIRECTORY and its ancestors; e.g., 'rmdir -p a/b' is similar to
        'rmdir a/b a'

    -v, --verbose
        output a diagnostic for every directory processed

    --help display this help and exit

    --version
        output version information and exit

AUTHOR
    Written by David MacKenzie.

REPORTING BUGS
    GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
    Report any translation bugs to <https://translationproject.org/team/>

SEE ALSO
    rmdir(2)

    Full documentation <https://www.gnu.org/software/coreutils/rmdir>
Manual page rmdir(1) line 1 (press h for help or q to quit)
```

Рис. 16: Команда man rmdir

```
rm(1)                                User Commands                                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 en-
  tire 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 --interactive=always option is given, rm
  prompts the user for whether to remove the file. If the response is not affirma-
  tive, 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 recur-
        sively; less intrusive than -i, while still giving protection against most
        mistakes

  --interactive[=WHEN]
        prompt according to WHEN: never, once (-I), or always (-i); without WHEN,
        prompt always

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

Рис. 17: Команда man rm

Получим при помощи команды history

```
50 git commit -am "Добавили сайт"
51 git push
52 make
53 git add .
54 git commit -am "feat(main): make course structure"
55 git push
56 cd
57 pwd
58 cd /tmp
59 ls
60 ls -a
61 ls -F
62 ls var/spool
63 ls /var/spool
64 cd
65 ls
66 ls -l
67 ls -i
68 ls -l
69 ls -l
70 mkdir newdir
71 ls
72 cd newdir
73 mkdir morefun
74 ls
75 mkdir letters memos misk
76 ls
77 cd
78 rm -r newdir
79 ls
80 man ls
81 man cd
82 man pwd
83 man mkdir
84 man rmdir
85 man rm
86 history
```

nvsaakyan@dk8n81 ~ \$

nvsaakyan@dk8n81 ~ \$ ls -F

bin/	public/	Видео/	Изображения/	'Рабочий стол'/
ls	public.html@	Документы/	Музыка/	Шаблоны/

Выполним модификацию и исполнение нескольких команд из буфера команд

```
nvsaakyan@dk8n81 ~ $ ls -a
.          .cache      .local      public      Документы      Шаблоны
.          .config     ls          public_html  Загрузки
.bash_history .gitconfig  main.cpp    .ssh        Изображения
.bash_profile .gnupg      .mozilla   work        Музыка
.bashrc      .gtkrc-2.0  .pki       .Xauthority  Общедоступные
bin         .ICEauthority .profile    Видео       'Рабочий стол'
```

Модификация

команды №494

Мы приобрели практические навыки взаимодействия пользователя с системой посредством командной строки.