

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

Лабораторная работа №4

---

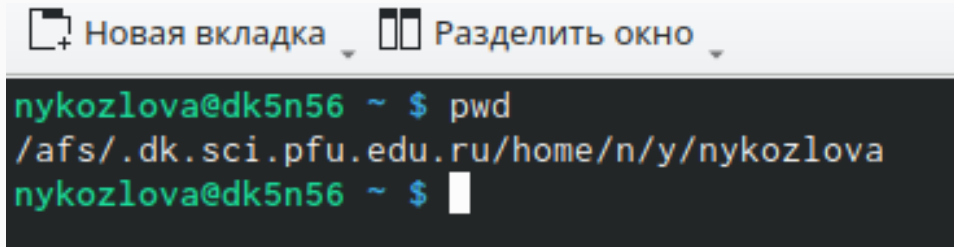
Козлова Нонна

Российский университет дружбы народов, Москва, Россия

НБИбд-04-22

Приобретение практических навыков взаимодействия пользователя с системой посредством командной строки.

1. Определяю имя своего домашнего каталога.



The image shows a terminal window with a light gray title bar. The title bar contains two buttons: 'Новая вкладка' (New tab) with a plus icon and 'Разделить окно' (Split window) with a square icon. The terminal itself has a black background with green text for the prompt and blue text for the command. The prompt is 'nykozlova@dk5n56 ~ \$'. The command 'pwd' has been entered. The output of the command is '/afs/.dk.sci.pfu.edu.ru/home/n/y/nykozlova'. The prompt is repeated on the next line, followed by a white cursor block.

```
nykozlova@dk5n56 ~ $ pwd
/afs/.dk.sci.pfu.edu.ru/home/n/y/nykozlova
nykozlova@dk5n56 ~ $
```

Рис. 1: Пользуюсь командой pwd

2. 1) Переходим в каталог tmp и выводим на экран его содержимое.

```
nykozlova@dk5n56 ~ $ cd /tmp
nykozlova@dk5n56 /tmp $ ls
gnome-desktop-thumbnailler-03UK01
gnome-desktop-thumbnailler-091U01
gnome-desktop-thumbnailler-0AH201
gnome-desktop-thumbnailler-0BGX01
gnome-desktop-thumbnailler-0BPK01
gnome-desktop-thumbnailler-0EWK01
gnome-desktop-thumbnailler-0GVK01
gnome-desktop-thumbnailler-0IOW01
gnome-desktop-thumbnailler-0MPK01
gnome-desktop-thumbnailler-0MXK01
gnome-desktop-thumbnailler-0QE401
gnome-desktop-thumbnailler-0QP001
gnome-desktop-thumbnailler-0TWK01
gnome-desktop-thumbnailler-0V7J01
gnome-desktop-thumbnailler-0X0U01
gnome-desktop-thumbnailler-11KW01
gnome-desktop-thumbnailler-11RK01
gnome-desktop-thumbnailler-142U01
gnome-desktop-thumbnailler-148R01
gnome-desktop-thumbnailler-14MK01
gnome-desktop-thumbnailler-16JU01
gnome-desktop-thumbnailler-19GX01
gnome-desktop-thumbnailler-19YP01
gnome-desktop-thumbnailler-1AUK01
gnome-desktop-thumbnailler-1BXX01
gnome-desktop-thumbnailler-1C5W01
gnome-desktop-thumbnailler-1C3V01
```

- 2) Определяем, есть ли в каталоге /var/spool подкаталог с именем cron (да, есть), далее переходим в домашний каталог и определяем, кто является владельцем (я).

```
nykozlova@dk5n56 /tmp $ ls /var/spool
cron cups fcron mail rsyslog slurm xrootd
nykozlova@dk5n56 /tmp $ cd
nykozlova@dk5n56 ~ $ ls
'2023-02-08 13-06-02.mkv'  public_html  Изображения
bin                       PycharmProjects  Музыка
blog                      tmp           Общедоступные
course-directory-student-template  work         'Рабочий стол'
GNUstep                   Видео        Шаблоны
KozlovaNonnaNBI.github.io  Документы
public                   Загрузки
```

Рис. 3: Пользуюсь командой ls

3. Создаем в домашнем каталоге каталог `newdir`, далее в нем создаем `morefun`, далее создаем одной командой три новых каталога. Пробуем удалить созданный каталог с помощью `rm`, видим, что не удаляется и удаляем его с помощью `rm -rf`.

```
nykozlova@dk5n56 /tmp $ cd
nykozlova@dk5n56 ~ $ mkdir newdir
nykozlova@dk5n56 ~ $ cd newdir
nykozlova@dk5n56 ~/newdir $ mkdir morefun
nykozlova@dk5n56 ~/newdir $ cd
nykozlova@dk5n56 ~ $ mkdir letters memos misk
nykozlova@dk5n56 ~ $ rm letter memos misk
rm: невозможно удалить 'letter': Нет такого файла или каталога
rm: невозможно удалить 'memos': Это каталог
rm: невозможно удалить 'misk': Это каталог
nykozlova@dk5n56 ~ $ rmdir letters memos misk
nykozlova@dk5n56 ~ $ rm newdir
rm: невозможно удалить 'newdir': Это каталог
nykozlova@dk5n56 ~ $ rmdir newdir
rmdir: не удалось удалить 'newdir': Каталог не пуст
nykozlova@dk5n56 ~ $ rm -rf newdir
nykozlova@dk5n56 ~ $
```

## 4. Запускаем команду man.

```
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 speci-
  fied.

  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 modification of
      file status information); with -l: show ctime and sort by name;
      otherwise: sort by ctime, newest first

  -C
      list entries by columns

  --color[=WHEN]
      color the output WHEN; more info below

  -d, --directory
      list directories themselves, not their contents

  -D, --dired
      generate output designed for Emacs' dired mode

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

5. Определяем, что `ls -c` позволяет отсортировать по времени последнего изменения выводимый список содержимого каталога с развёрнутым описанием файлов.

```
-c      with -lt: sort by, and show, ctime (time of last modification of  
        file status information); with -l: show ctime and sort by name;  
        otherwise: sort by ctime, newest first  
  
-C      list entries by columns
```

Рис. 6: Пользуемся данной теорией



6. Используем команду `man` для просмотра описания следующих команд: `cd`, `pwd`, `mkdir`, `rmdir`, `rm`.

```
CD(1P)                                POSIX Programmer's Manual                                CD(1P)

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-de-
   fined 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 cur-
   path 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 (see the ENVIRONMENT VARIABLES section) if the pathname
   is non-null, test if the concatenation of that pathname, a <slash>
   character if that pathname did not end with a <slash> character,
   and the directory operand names a directory. If the pathname is
   null, test if the concatenation of dot, a <slash> character, and
   the operand names a directory. In either case, if the resulting
   string names an existing directory, set curpath to that string and
   proceed to step 7. Otherwise, repeat this step with the next path-
   name in CDPATH, until all pathnames have been tested.
```

```
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 super-
    sedes the version described here. Please refer to your shell's docu-
    mentation 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)

    Full documentation <https://www.gnu.org/software/coreutils/pwd>
    or available locally via: info '(coreutils) pwd invocation'

    Packaged by Gentoo (9.1-r2 (p0))
    Copyright © 2022 Free Software Foundation, Inc.
    License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
    This is free software; you are free to change and redistribute it.
    There is NO WARRANTY, to the extent permitted by law.

GNU coreutils 9.1                      April 2022                              PWD(1)
```

```
Manual page pwd(1) line 1/49 (END) (press h for help or q to quit)
```

Рис. 8: Пользуемся данной теорией

```
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 context to CTX

    --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
    mkdir(2)

    Full documentation <https://www.gnu.org/software/coreutils/mkdir>
    or available locally via: info '(coreutils) mkdir invocation'

    Packaged by Gentoo (9.1-r2 (p0))

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

Рис. 9: Пользуемся данной теорией

```

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 that is solely because a directory is
        non-empty

    -p, --parents
        remove DIRECTORY and its ancestors; e.g., 'rmdir -p a/b/c' is
        similar to 'rmdir a/b/c 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>
    or available locally via: info '(coreutils) rmdir invocation'

    Packaged by Gentoo (9.1-r2 (p0))
    Copyright © 2022 Free Software Foundation, Inc.
    License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
    This is free software: you are free to change and redistribute it.
    There is NO WARRANTY, to the extent permitted by law.

GNU coreutils 9.1                        April 2022                                RMDIR(1)
Manual page rmdir(1) line 1/48 (END) (press h for help or q to quit)

```

Рис. 10: Пользуемся данной теорией

```

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.

    If the -i or --interactive=once option is given, and there are more than three
    files, the entire command is aborted.

    Otherwise, if a file is unwritable, standard input is a terminal, and the -i
    option 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
        read-only files

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

    --one-file-system
        when removing a hierarchy recursively, skip any directory that is on
        a different file system

    --no-preserve-root
        do not treat '/' specially

    --preserve-root[=all]
        do not remove '/' (default); with 'all', reject any command line argument
        that would remove '/'

    -r, -R, --recursive
        remove directories and their contents recursively

    -d, --dir
        remove empty directories

    -v, --verbose
        explain what is being done

    --help
        display this help and exit

```

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

Рис. 11: Пользуемся данной теорией



В ходе лабораторной работы я приобрела практические навыки взаимодействия пользователя с системой по-средством командной строки.