

Шаблон отчёта по лабораторной работе

6

Абдуллахи Бахара

Содержание

1	Цель работы	5
2	Теоретическое введение	6
3	Последовательность выполнения работы	7

Список иллюстраций

3.1	Написала man cd	19
3.2	Написала man pwd	20
3.3	Написала man mkdir	21
3.4	Написала man rmdir	22
3.5	Написала man rm	23

Список таблиц

2.1	Описание некоторых каталогов файловой системы GNU Linux . .	6
-----	---	---

1 Цель работы

Приобретение практических навыков взаимодействия пользователя с системой посредством командной строки.

2 Теоретическое введение

Здесь описываются теоретические аспекты, связанные с выполнением работы.

Например, в табл. 2.1 приведено краткое описание стандартных каталогов Unix.

Таблица 2.1: Описание некоторых каталогов файловой системы GNU Linux

Имя каталога	Описание каталога
/	Корневая директория, содержащая всю файловую систему
/bin	Основные системные утилиты, необходимые как в однопользовательском режиме, так и при обычной работе всем пользователям
/etc	Общесистемные конфигурационные файлы и файлы конфигурации установленных программ
/home	Содержит домашние директории пользователей, которые, в свою очередь, содержат персональные настройки и данные пользователя
/media	Точки монтирования для сменных носителей
/root	Домашняя директория пользователя root
/tmp	Временные файлы
/usr	Вторичная иерархия для данных пользователя

Более подробно про Unix см. в [1–4].

3 Последовательность выполнения работы

1. Определите полное имя вашего домашнего каталога. Далее относительно этого каталога будут выполняться следующие упражнения.

```
foot
[abdullakhi@abdullakhi ~]$ pwd
/home/abdullakhi
[abdullakhi@abdullakhi ~]$ cd /tmp
[abdullakhi@abdullakhi tmp]$
```

2. Выполните следующие действия:

- Перейдите в каталог /tmp.
- Выведите на экран содержимое каталога /tmp. Для этого используйте команду ls с различными опциями. Поясните разницу в выводимой на экран информации

```
[babdullakhi@babdullakhi tmp]$ ls
sddm-auth-4f152bc1-971b-4adb-9ef5-dd4532500832
sddm--EcLAYp
snap-private-tmp
systemd-private-9e8036d59b834fea9560c70fe8408a84-chronyd.servic
e-qEX0sk
systemd-private-9e8036d59b834fea9560c70fe8408a84-dbus-broker.se
rvice-QP0D1l
systemd-private-9e8036d59b834fea9560c70fe8408a84-ModemManager.s
ervice-2wsAbV
systemd-private-9e8036d59b834fea9560c70fe8408a84-polkit.service
-rwALtm
systemd-private-9e8036d59b834fea9560c70fe8408a84-rtkit-daemon.s
ervice-x39AUc
systemd-private-9e8036d59b834fea9560c70fe8408a84-switcheroo-con
trol.service-U6pGRA
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-logind
.service-qj1Vwh
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-oomd.s
ervice-ZVkhY8
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-resolv
ed.service-akkpIz
systemd-private-9e8036d59b834fea9560c70fe8408a84-upower.service
-0kdqo0
Temp-6a37ad1e-596a-4f24-8f80-0d879886ad9d
vboxguest-Module.symvers
[babdullakhi@babdullakhi tmp]$ █
```



```
[babdullakhi@babdullakhi tmp]$ ls -a
.
..
.font-unix
.ICE-unix
sddm-auth-4f152bc1-971b-4adb-9ef5-dd4532500832
sddm--EcLAYp
snap-private-tmp
systemd-private-9e8036d59b834fea9560c70fe8408a84-chronyd.servic
e-qEX0sk
systemd-private-9e8036d59b834fea9560c70fe8408a84-dbus-broker.se
rvice-QP0D1l
systemd-private-9e8036d59b834fea9560c70fe8408a84-ModemManager.s
ervice-2wsAbV
systemd-private-9e8036d59b834fea9560c70fe8408a84-polkit.service
-rwALtm
systemd-private-9e8036d59b834fea9560c70fe8408a84-rtkit-daemon.s
ervice-x39AUc
systemd-private-9e8036d59b834fea9560c70fe8408a84-switcheroo-con
trol.service-U6pGRA
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-logind
.service-qj1Vwh
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-oomd.s
ervice-ZVkhY8
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-resolv
ed.service-akkpIz
systemd-private-9e8036d59b834fea9560c70fe8408a84-upower.service
-0kdqo0
Temp-6a37ad1e-596a-4f24-8f80-0d879886ad9d
vboxguest-Module.symvers
.X0-lock
.X11-unix
.XIM-unix
[babdullakhi@babdullakhi tmp]$
```

```

foot
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-chronyd.service-qEX0
sk
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-dbus-broker.service-
QPOD11
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-ModemManager.service
-2wsAbV
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-polkit.service-rwAlt
m
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-rtkit-daemon.service
-x39AUc
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-switcheroo-control.s
ervice-U6pGRA
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-systemd-logind.servi
ce-qj1Vwh
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-systemd-oomd.service
-ZVkhY8
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-systemd-resolved.ser
vice-akkpIz
drwx----- . 3 root      root      60 Mar 16 18:53 system
d-private-9e8036d59b834fea9560c70fe8408a84-upower.service-0kdqo
0
drwx----- . 2 babdullakhi babdullakhi  40 Mar 16 18:57 Temp-6
a37ad1e-596a-4f24-8f80-0d879886ad9d
-rw-r--r-- . 1 root      root      28086 Mar 16 18:54 vboxgu
est-Module.symvers
[babdullakhi@babdullakhi tmp]$ █

```



```
[babdullakhi@babdullakhi tmp]$ ls -f
.
..
snap-private-tmp
.X11-unix
.ICE-unix
.XIM-unix
.font-unix
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-oomd.s
ervice-ZVkhY8
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-resolv
ed.service-akkpIz
systemd-private-9e8036d59b834fea9560c70fe8408a84-dbus-broker.se
rvice-QPODl1
systemd-private-9e8036d59b834fea9560c70fe8408a84-chronyd.servic
e-qEX0sk
systemd-private-9e8036d59b834fea9560c70fe8408a84-polkit.service
-rwAltm
systemd-private-9e8036d59b834fea9560c70fe8408a84-rtkit-daemon.s
ervice-x39AUc
systemd-private-9e8036d59b834fea9560c70fe8408a84-switcheroo-con
trol.service-U6pGRA
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-logind
.service-qj1Vwh
systemd-private-9e8036d59b834fea9560c70fe8408a84-upower.service
-0kdqo0
systemd-private-9e8036d59b834fea9560c70fe8408a84-ModemManager.s
ervice-2wsAbV
vboxguest-Module.symvers
sddm-auth-4f152bc1-971b-4adb-9ef5-dd4532500832
sddm--EcLAYp
.X0-lock
Temp-6a37ad1e-596a-4f24-8f80-0d879886ad9d
[babdullakhi@babdullakhi tmp]$
```

```
[babdullakhi@babdullakhi tmp]$ ls -alf
.
..
snap-private-tmp
.X11-unix
.ICE-unix
.XIM-unix
.font-unix
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-oomd.s
ervice-ZVkhY8
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-resolv
ed.service-akkpIz
systemd-private-9e8036d59b834fea9560c70fe8408a84-dbus-broker.se
rvice-QP0Dl1
systemd-private-9e8036d59b834fea9560c70fe8408a84-chronyd.servic
e-qEX0sk
systemd-private-9e8036d59b834fea9560c70fe8408a84-polkit.service
-rwALtm
systemd-private-9e8036d59b834fea9560c70fe8408a84-rtkit-daemon.s
ervice-x39AUc
systemd-private-9e8036d59b834fea9560c70fe8408a84-switcheroo-con
trol.service-U6pGRA
systemd-private-9e8036d59b834fea9560c70fe8408a84-systemd-logind
.service-qj1Vwh
systemd-private-9e8036d59b834fea9560c70fe8408a84-upower.service
-0kdqo0
systemd-private-9e8036d59b834fea9560c70fe8408a84-ModemManager.s
ervice-2wsAbV
vboxguest-Module.symvers
sddm-auth-4f152bc1-971b-4adb-9ef5-dd4532500832
sddm--EcLAYp
.X0-lock
Temp-6a37ad1e-596a-4f24-8f80-0d879886ad9d
[babdullakhi@babdullakhi tmp]$
```

- Определите, есть ли в каталоге /var/spool подкаталог с именем cron?

- Перейдите в Ваш домашний каталог и выведите на экран его содержимое. Определите, кто является владельцем файлов и подкаталогов?

```
[babdullakhi@babdullakhi tmp]$ cd /var/spool  
[babdullakhi@babdullakhi spool]$
```

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

3. Выполните следующие действия:

- В домашнем каталоге создайте новый каталог с именем newdir.

```
[babdullakhi@babdullakhi ~]$ mkdir newdir  
[babdullakhi@babdullakhi ~]$
```

- В каталоге ~/newdir создайте новый каталог с именем morefun.

```
[babdullakhi@babdullakhi ~]$ mkdir newdir/morefun  
[babdullakhi@babdullakhi ~]$
```

- В домашнем каталоге создайте одной командой три новых каталога с именами letters, memos, misk. Затем удалите эти каталоги одной командой.

```
[babdullakhi@babdullakhi ~]$ mkdir letter memos misk  
[babdullakhi@babdullakhi ~]$  
[babdullakhi@babdullakhi ~]$ rmdir letter memos misk  
[babdullakhi@babdullakhi ~]$
```

- Попробуйте удалить ранее созданный каталог ~/newdir командой rm. Проверьте, был ли каталог удалён.

- Удалите каталог ~/newdir/morefun из домашнего каталога. Проверьте, был ли каталог удалён.

```
[babdullakhi@babdullakhi ~]$ rm newdir
rm: cannot remove 'newdir': Is a directory
[babdullakhi@babdullakhi ~]$ rmdir newdir/morefun
[babdullakhi@babdullakhi ~]$
```

4. С помощью команды `man` определите, какую опцию команды `ls` нужно использовать для просмотра содержимое не только указанного каталога, но и подкаталогов, входящих в него.


```
-p, --indicator-style=slash
    append / indicator to directories

-q, --hide-control-chars
    print ? instead of nongraphic characters

--show-control-chars
    show nongraphic characters as-is (the default,
    unless program is 'ls' and output is a terminal)

-Q, --quote-name
    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 (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
```

```
Manual page ls(1) line 133 (press h for help or q to quit)
```

5. С помощью команды `man` определите набор опций команды `ls`, позволяющий отсортировать по времени последнего изменения выводимый список содержимого каталога с развёрнутым описанием файлов.

foot

```
--hyperlink[=WHEN]  
    hyperlink file names WHEN  
  
--indicator-style=WORD  
    append indicator with style WORD to entry  
    names: none (default), slash (-p), file-type  
    (--file-type), classify (-F)  
  
-i, --inode  
    print the index number of each file  
  
-I, --ignore=PATTERN  
    do not list implied entries matching shell PAT-  
    TERN  
  
-k, --kibibytes  
    default to 1024-byte blocks for file system us-  
    age; used only with -s and per directory totals  
  
-l      use a long listing format  
  
-L, --dereference  
    when showing file information for a symbolic  
    link, show information for the file the link  
    references rather than for the link itself  
  
-m      fill width with a comma separated list of en-  
    tries  
  
-n, --numeric-uid-gid  
    like -l, but list numeric user and group IDs  
  
-N, --literal  
    print entry names without quoting
```

Manual page ls(1) line 97 (press h for help or q to quit)

6. Используйте команду `man` для просмотра описания следующих команд: `cd`, `pwd`, `mkdir`, `rmdir`, `rm`. Поясните основные опции этих команд.

```
foot
BASH_BUILTINS(1)  General Commands Manual  BASH_BUILTINS(1)

NAME
    :, ., [, alias, bg, bind, break, builtin, caller, cd,
    command, compgen, complete, compopt, continue, de-
    declare, dirs, disown, echo, enable, eval, exec, exit,
    export, false, fc, fg, getopts, 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 docu-
    mented 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, lo-
    gout, 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 re-
    quire -- to prevent this interpretation.

    : [arguments]
        No effect; the command does nothing beyond ex-
        panding 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

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

Рис. 3.1: Написала man cd

```
foot
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 version described here.
    Please refer to your shell's documentation for details
    about the options it supports.

AUTHOR
    Written by Jim Meyering.

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

Рис. 3.2: Написала man pwd

```
foot
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

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

Рис. 3.3: Написала man mkdir


```
foot
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 di-
        rectory

    -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/>

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

Рис. 3.4: Написала man rmdir

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

Рис. 3.5: Написала man rm

7. Используя информацию, полученную при помощи команды `history`, выполните модификацию и исполнение нескольких команд из буфера команд.

foot

```
322 mkdir newdir morefun
323 mkdir letter memos misk
324 rmdir letter memos misk
325 rm newdir
326 rmdir newdir/morefun
327 exit
328 pwd
329 cd /tmp
330 ls
331 ls -a
332 ls -l
333 ls -f
334 ls -alf
335 cd /var/spool
336 cd ~
337 ls
338 cd /var/spool
339 ls
340 mkdir newdir
341 cd
342 mkdir newdir
343 mkdir newdir/morefun
344 mkdir letter memos misk
345 rmdir letter memos misk
346 cd
347 rm newdir
348 rmdir newdir/morefun
349 man ls
350 man cd
351 man pwd
352 man mkdir
353 man rmdir
354 man rm
355 history
```

[babdullakhi@babdullakhi ~]\$

```
[babdullakhi@babdullakhi ~]$ !335:s/spool
cd /var/
[babdullakhi@babdullakhi var]$
```

{#fig:023width=100%}

```
[babdullakhi@babdullakhi var]$ !333:s/-f/-l
ls -l
total 12
drwxr-xr-x. 1 root root 10 Nov 1 04:07 account
drwxr-xr-x. 1 root root 0 Jul 21 2023 adm
drwxr-xr-x. 1 root root 194 Mar 6 23:45 cache
drwxr-xr-x. 1 root root 0 Dec 13 03:00 crash
drwxr-xr-x. 1 root root 8 Nov 1 04:06 db
drwxr-xr-x. 1 root root 0 Jul 21 2023 empty
drwxr-xr-x. 1 root root 0 Jul 21 2023 ftp
drwxr-xr-x. 1 root root 0 Jul 21 2023 games
drwxr-xr-x. 1 root root 8 Jan 17 03:00 kerberos
drwxr-xr-x. 1 root root 918 Mar 6 23:45 lib
drwxr-xr-x. 1 root root 0 Jul 21 2023 local
lrwxrwxrwx. 1 root root 11 Nov 1 04:05 lock -> ../run/lock
drwxr-xr-x. 1 root root 1218 Mar 16 18:53 log
lrwxrwxrwx. 1 root root 10 Jul 21 2023 mail -> spool/mail
drwxr-xr-x. 1 root root 0 Jul 21 2023 nis
drwxr-xr-x. 1 root root 0 Jul 21 2023 opt
drwxr-xr-x. 1 root root 0 Jul 21 2023 preserve
lrwxrwxrwx. 1 root root 6 Nov 1 04:05 run -> ../run
drwxr-xr-x. 1 root root 124 Mar 1 13:31 snap
drwxr-xr-x. 1 root root 94 Nov 1 04:07 spool
drwxrwxrwt. 1 root root 1558 Mar 16 19:41 tmp
drwxr-xr-x. 1 root root 0 Jul 21 2023 yp
[babdullakhi@babdullakhi var]$
```

1. Таненбаум Э., Бос Х. Современные операционные системы. 4-е изд. СПб.: Питер, 2015. 1120 с.
2. Robbins A. Bash Pocket Reference. O'Reilly Media, 2016. 156 с.
3. Zarrelli G. Mastering Bash. Packt Publishing, 2017. 502 с.

4. Newham C. Learning the bash Shell: Unix Shell Programming. O'Reilly Media, 2005. 354 c.