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Explore CLI of Linux

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Target: Learn or Revise at least 5 commands everyday

Please feel free to modify this file.

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Explore CLI of Linux-1: man, help, uname, clear, pwd, cd, ls [7 commands]

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In CLI (Command Line Interface), users only need to use a keyboard to navigate the interface.
Therefore, it is often faster than GUI (Graphical User Interface).

The CLI is preferred by dedicated and hard core programmers for efficiency and speed,
on the other hand the GUI preferred by most general users for its user friendliness.

General form for giving a command to CLI:
  $ commandName [OPTIONS] [fileName]

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1. man: display manual of a command, program, utility, or function.

  Command:
    $ man [OPTIONS] commandName

  Example:
    $ man pwd
    $ man ls

  !!! Press 'q' to quit !!!
  !!! Not all commands have manuals displayed by 'man' !!!

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2. help: display information about builtin commands.

  Command:
    $ help [OPTIONS] commandName

  Example:
    /***** To see the list of all shell builtin ****/
    $ help
    GNU bash, version 4.3.48(1)-release (x86_64-pc-linux-gnu)
    These shell commands are defined internally. Type `help' to see this list.
    Type `help name' to find out more about the function `name'.
    Use `info bash' to find out more about the shell in general.
    Use `man -k' or `info' to find out more about commands not in this list.

    A star (*) next to a name means that the command is disabled.

    job_spec [&]
    ((expression))

. filename [arguments]
:
[arg...]

.....
.....

/**** *****/
$ help help
help: help [-dms] [pattern ...]
Display information about builtin commands.

Displays brief summaries of builtin commands. If PATTERN is
specified, gives detailed help on all commands matching PATTERN,
otherwise the list of help topics is printed.

Options:
-d output short description for each topic
-m display usage in pseudo-manpage format
-s output only a short usage synopsis for each topic matching
PATTERN

Arguments:
PATTERN Pattern specifying a help topic

Exit Status:
Returns success unless PATTERN is not found or an invalid option is given.

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3. uname: print system information

Command:
$ uname [OPTION]...

Examples:
$ uname -a
Linux sangeeta-Aspire-one-1-131 4.10.0-33-generic #37~16.04.1-Ubuntu SMP
Fri Aug 11 14:07:24 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux

Notes:
1. Linux: kernel name [$ uname -s]
2. sangeeta-Aspire-one-1-131: node name [$ uname -n]
3. 4.10.0-33-generic: kernel release [$ uname -r]
4. #37~16.04.1-Ubuntu SMP Fri Aug 11 14:07:24 UTC 2017: kernel version
[$ uname -v]
5. x86_64: 64 bit machine hardware, (whereas i386: 32 bit machine)
[$ uname -m]
6. x86_64: 64 bit processor type [$ uname -p]
7. x86_64: 64 bit hardware platform [$ uname -i]
8. GNU/Linux: operating system [$ uname -o]

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4. clear: clear the terminal screen

Command:
$ clear

Notes:
1. It actually does not delete any content.
2. It mainly scrolls down the screen keeping all contents of the terminals.

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5. pwd: print name of the current/working directory.

Command:
$ pwd [OPTION]...

Example:
$ pwd
/home/sangeeta
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6. cd: Change directory
Command:
$ cd
$ cd symbols
$ cd DirName_SingleWord
$ cd 'DirName_String'

Examples:
$ cd [change to home directory]
$ cd ~ [change to home directory]
$ cd / [change to root directory]
$ cd . [remain at current directory]
$ cd .. [move to parent directory]
$ cd ../../ [move to grandparent directory]
$ cd ../../etc [move to uncle's directory, 'etc']
$ cd ExploreLinux/Test [relative path]
$ cd /home/sangeeta/ExploreLinux/Test [absolute path]
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7. ls: List directory contents

Command:
$ ls [OPTION]... [FILE].....

Examples:
$ ls -a, --all [list everything including entries starting with .]
$ ls -l [use a long listing format]
$ ls -i [print the index number (inode) of each file.]
$ ls -il ExploreLinux/Test
$ ls -l ExploreLinux/Commands.docx
$ ls -lh [list in human-readable sizes]

$ ls -ailh ExploreLinux/Test1
total 32K
1310751 drwxrwxr-x 2 sangeeta sangeeta 4.0K Aug 28 09:09 .
540982 drwxrwxr-x 7 sangeeta sangeeta 4.0K Aug 28 09:09 ..
1356141 -r-x-wxrwx 3 sangeeta sangeeta 11 Aug 18 19:18 file1.txt
1360998 -rw-rw-r-- 1 sangeeta sangeeta 12 Aug 18 19:18 file2.txt
1310901 -rw-rw-r-- 1 sangeeta sangeeta 23 Aug 18 19:21 file3.txt
1356141 -r-x-wxrwx 3 sangeeta sangeeta 11 Aug 18 19:18 hardLink1_file1.txt
1356141 -r-x-wxrwx 3 sangeeta sangeeta 11 Aug 18 19:18 hardLink2_file1.txt
1361696 -rw-rw-r-- 1 sangeeta sangeeta 54 Aug 20 02:33 nanoUse.txt
1310750 lrwxrwxrwx 1 sangeeta sangeeta 9 Aug 20 02:25 softLinkFile1.txt -> file1.txt

Notes:
1. 1st line shows the total size of the contents of the looking directory
2. 2-n lines show:
a) 1st column: inode

b) 2nd column: file type + privileges
  i) file type: 1st field of 2nd column
    * 7 types of files:
      - : regular file
      d : directory
      l : soft link
      s : local domain socket
      c : character device file
      b : block device file
      p : pipeline
  ii) privilege: next 6 fields of 2nd column
    * 4 kinds of privileges:
      - : nothing
      r : read
      w : write
      x : execution
    * 1st 3 fields: for user
      next 3 fields: for group-mates
      next-next 3 fields: for users of other groups
  iii) example: -r-x-wxrwx [a bit strange example!!!]
    * regular file
    * user can read and execute, but cannot modify
    * group-mates cannot read, but write/modify and execute
    * users of other users can do everything

c) 3rd column: number of links
  i) for a file, it is the number of hard links.
  ii) for a soft-link, it is 1.
  iii) for a directory, it is 2+n where 'n' is the number of
    sub directory. '2' is for . and .. which are the softlink
    of this directory and its parent's directory.
  iv) for ., it is 2.
  v) for .., it is 2+number of parent's sub directory.

d) 4th column: user's name
  i) 3 kinds of users:
    * root: can do almost everything and anything.
    * sudo: can do things permitted by other users.
    * normal user: can do its own tasks since it has
        full control only on its own resources.
  ii) root user is labeled as 'root'.
  iii) sudoers and normal users are labeled by userName.

e) 5th column: group's name
f) 6th column: size of the file
g) 7th column: month of modification.
h) 8th column: date of modification.
i) 9th column: time of modification.
j) 10th column: file name.

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