

LECTURE NOTES IN CIS300

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SECTION 1: BASH

REFERENCES

- "Basic UNIX commands" [[link](#)]
- "Bash Guide for Beginners" [[link](#)]
- "Advanced Bash-Scripting Guide" [[link](#)]

GETTING STARTED

Access Shell terminal in your computer

- Option 1: Web terminal
 - [<http://www.webminal.org/terminal/>]
- Option 2: Setting up Ubuntu through VirtualBox
 - TA will talk about this.

LECTURE 2: FILES & DIRECTORIES

DIRECTORIES

- List files and directories: `ls`
 - `ls ~, ls ., ls`
 - `ls /`
 - `ls -al`
- Enter a directory: `cd`
 - `cd, cd ~, cd ..`
 - `cd /`
- Print the current pathname: `pwd`
- Create a directory: `mkdir`
 - `mkdir dir_a`

BASIC FILE MANAGEMENT

- Create a file: `touch`
 - `touch file_a`
- Move a file (change file name): `mv`
 - `mv file_a file_b`
- Copy a file: `cp`
 - `cp file_a file_b`
- Remove a file: `rm`
 - `rm file_a`

BASIC FILE MANAGEMENT (2)

- Show the content of a file: `cat`, `more`
 - `cat file_a`
 - `more file_a`: use `q` to quit, `/` to search
 - Write text to a file: `echo >>`
 - `echo "Alice Bob" >> file_a`
 - `echo "Alice" >> file_b,`
`echo "Alice" >> file_c`
- Show the count of lines/words/chars a file: `wc`
 - `wc file_a`
- Show difference between files: `diff`
 - `diff file_a file_b`

EXERCISE 2.1

1. Run command `ls -a /`. Copy and paste (C&P) the printout on BB.
2. Run command `cat file_b`. C&P printout on BB.
3. Create a directory `dir_b` under `dir_a` and enter it. C&P the commands on BB.
4. Create a text file named `file_d.txt` and put there the following string: `Charlie is a student`. Run `cat file_d.txt`.
 - C&P the list of commands and their printout on BB

LECTURE 3: FILE PERMISSION

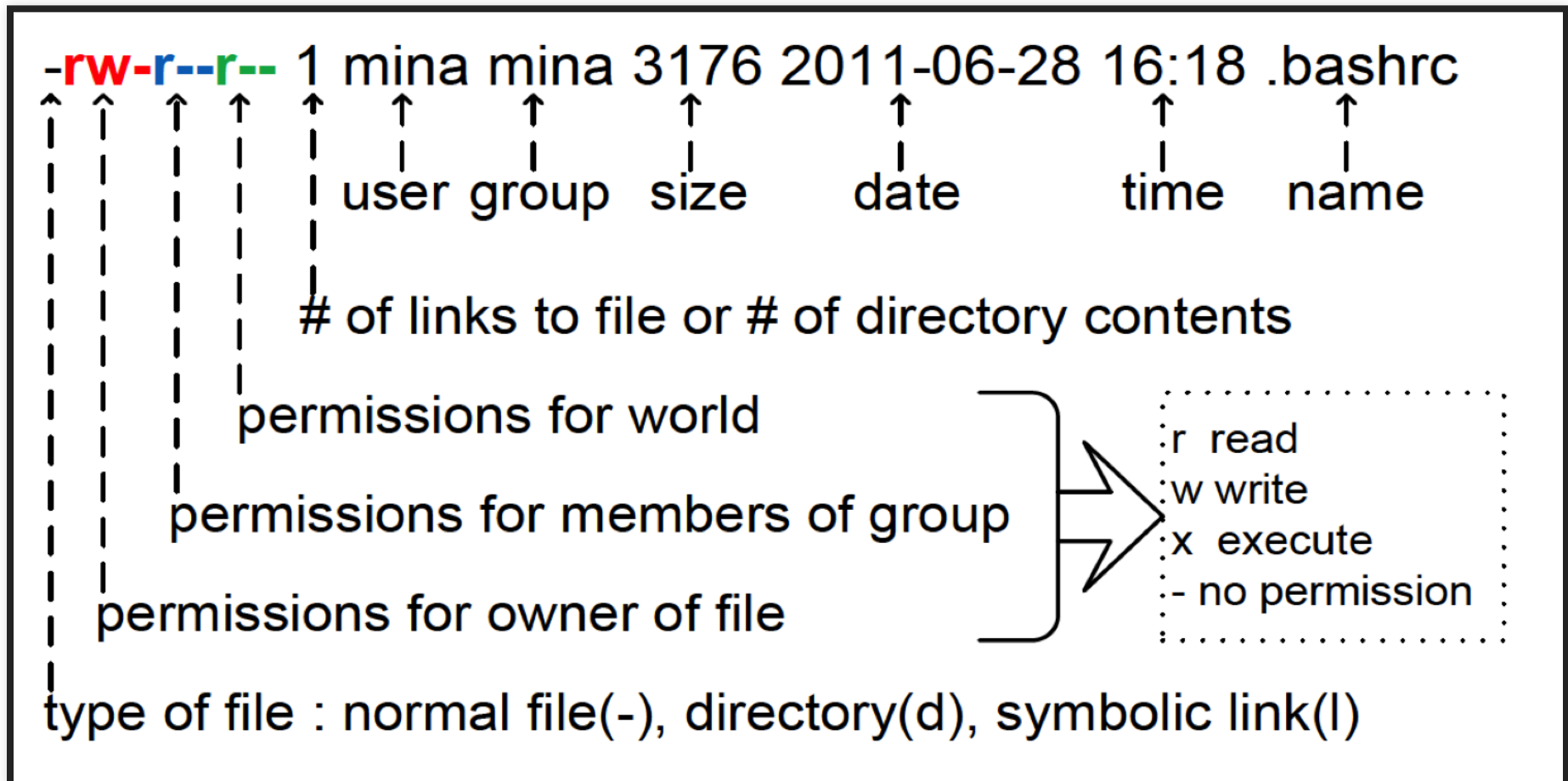
BASIC CONCEPT

- file permission: access right, or file mode
 - permission controls the ability of a *user* to take *actions* on a *file*
 - user: owner, group, all users
 - group: group of users and files.
 - type: read, write, execute

VIEWING PERMISSION

```
ls -l
```

- owner and group
- permissions
 - users: owner (u), group (g), others (o), all users (a)
 - type: read (r), write (w), execute (x)



ls -al

CHANGING PERMISSION

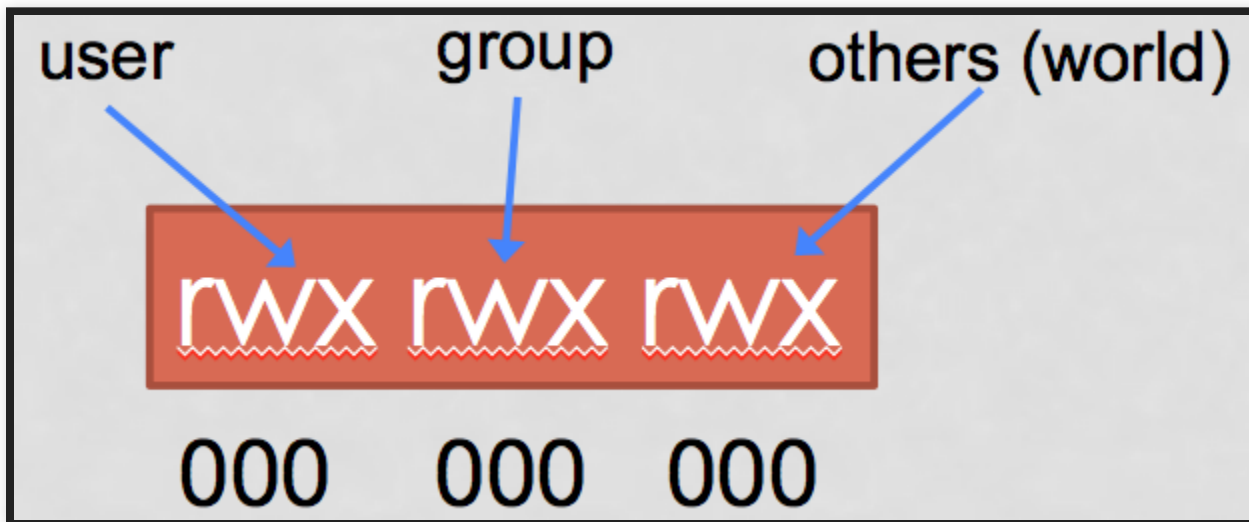
- `chmod`: change mode
 - `add +`:
 - `chmod a+wx file_a`: add write/execute permission to all users
 - `chmod g+r file_a`: add read permission to group users
 - `assign/copy =`:
 - `chmod g=rw file_a`: assign read/write permission to group
 - `chmod g=o file_a`: copy owner permission to group permission

CHANGING PERMISSION (2)

Options	Definitions
u	Owner
g	Group
o	Other
a	All (same as <u>ugo</u>)
x	Execute
w	Write
r	Read
+	Add permission
-	Remove permission
=	Set permission

CHANGING PERMISSION: NUMERIC MODE (3)

- `chmod 777 file_a; chmod a+rx file_a`
 - `chmod 666 file_a; chmod a=rw file_a`
 - `chmod 000 file_a; chmod a-rwx file_a`



CHANGE OWNERSHIP

- `chown owner:group filename`
 - `chown user1:staff file_a`

EXERCISE 3.1

1. Run command `chmod o-r file_a; cat file_a`.
C&P the printout on BB.
2. Design the command to make a file read-only to group. C&P your command on BB.
3. Design the command to make a file read-only to all users.
C&P your command on BB.
4. Conver the following two commands to numeric mode:
`chmod a-rwx file_a; chmod o+x file_a`. C&P your command on BB.