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# Question 1

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## Description, formula/syntax, 3 examples that you understand well

### awk

- (Description) a scripting language used for processing and displaying text.
- (formula/syntax) `awk + options + {awk command} + file + file to save (optional)`
- (3 examples)
  - start printing a file from a given line
  - `awk 'NR > { print }' /etc/passwd`

### cat

- (Description) used for seeing the content of a file. Also used for concatenating files.
- (formula/syntax) `cat + option + file or files to view/concatenate`
- (3 examples)
  - how to see content of a file:
    - `cat /etc/passwd`
  - how to see the content of a file with line numbers:
    - `cat -n /etc/passwd`
  - how to see the content of a file with ending line character.
    - `cat -E /etc/passwd`

### cp

- (Description) copies files/directories from a source to a destination
- (formula/syntax) `cp + files to copy + destination`
- (3 examples)
  - to copy a file
  - `cp Downloads/wallpapers.zip Pictures/`
  - to copy a directory with absolute path
  - `cp -r ~/Downloads/wallpapers ~/Pictures/`
  - to copy the content of a directory to another directory.
  - `cp Downloads/wallpapers/* ~/Pictures/`

### cut

- (Description) The cut command is used to extract a specific section of each line of a file and display it to the screen
- (formula/syntax) `cut + option + file(s)`
- (3 examples)
  - Display a list of all the users in your system
  - `cut -d ':' -f1 /etc/passwd`
  - Display a list of all the users in your system with their login shell
  - `cut -d ':' -f1,7 /etc/passwd`

- cut a range of bytes per line
- `cut -b 1-5 usernames.txt`

## grep

- (Description) used to search text in given file.
- (formula/syntax) `grep + option + search criteria + file(s)`
- (3 examples)
  - search any line that contains the word "dracula" in the given file
  - `grep 'dracula' ~/Documents/dracula.txt`
  - search any line that contains the word "dracula" regardless of the case
  - `grep -i 'dracula' ~/Documents/Books/dracula.txt`
  - search any line that contains the word "dracula" regardless of the case and line number
  - `grep -in 'dracula' ~/Documents/Books/dracula.txt`

## head

- (Description) displays the top N number of lines of a given file.
- (formula/syntax) `head + option + file(s)`
- (3 examples)
  - display the first 10 lines of a file
  - `head ~/Documents/Book/dracula.txt`
  - display the first 5 lines of a file
  - `head -5 ~/Documents/Book/dracula.txt`

## ls

- (Description) ls is used for listing the content of a given directory or the file/directory itself.
- (formula/syntax) `ls + option + directory to list`
- (3 examples)
  - list all the files inside the current working directory including hidden files.
  - `ls -a`
  - list all the files inside a given directory
  - `ls -a ~/Pictures`
  - long list all the files inside a given directory recursively
  - `ls -lR ~/Pictures`

## man

- (Description) manuel is to get help
- (formula/syntax)
- (3 examples) `man ls` `man pwd` `man passwd`

## mkdir

- (Description) used for creating a single directory or multiple directories.
- (formula/syntax) `mkdir + the name of the directory`
- (3 examples)
  - create a directory in the present working directory
  - `mkdir wallpapers`

- create a directory in a different directory using relative path
- `mkdir wallpapers/ocean`
- create a directory in a different directory using absolute path
- `mkdir ~/wallpapers/forest`

## mv

- (Description) mv moves and renames directories.
- (formula/syntax) `mv + source + destination`
- (3 examples)
  - to move a file from a directory to another using relative path
  - `mv Downloads/homework.pdf Documents/`
  - to move a file from a directory to another using absolute path
  - `sudo mv ~/Downloads/theme /usr/share/themes`
  - to move a file from a directory to another combining absolute path and relative path
  - `mv Downloads/english_homework.docx /media/student/flashdrive/`

## tac

- (Description) used for displaying the content of a file in reverse order.
- (formula/syntax) `tac + option + files` to display
- (3 examples)
  - display the content of a file located in the pwd
  - `tac todo.md`
  - display the content of a file using absolute path
  - `tac ~/Documents/todo.md`

## tail

- (Description) displays the last N number of lines of a give file.
- (formula/syntax) `tail + option + file`
- (3 examples)
  - display the last 10 lines of a file
  - `tail ~/Documents/Book/dracula.txt`
  - display the last 5 lines of a file
  - `tail -5 ~/Documents/Book/dracula.txt`

## touch

- (Description) used for creating files
- (formula/syntax) `touch + file name`
- (3 examples)
  - to create a file called list
  - `touch list`
  - to create a file using absolute path
  - `touch ~/Downloads/games.txt`
  - to create a file using relative path
  - `touch Downloads/games2.txt`

## tr

- (Description) used for translating or deleting characters from standard output.
- (formula/syntax) `Standard output | tr + option + set + set`
- (3 examples)
  - translate one character to another
  - `cat file.txt | tr '.' ','`
  - translate white space into tabs.
  - `cat program.py | tr "[:space:]" '\t'`
  - translate tabs into space
  - `cat file.py | tr -s "[:space:]" ' '`

## tree

- (Description) shows you list of your files
- (formula/syntax)
- (3 examples)

## vim/nano

- (Description) the vi command line text editor is included in all POSIX compliant operating system.
- (formula/syntax)
- (3 examples) `vim notes.txt`

# Question 2

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- How to work with multiple terminals open?
  - open one terminal then open another terminal and set them side by side.
- How to work with manual pages?
  - to navigate the man page of a command, you can use the arrow key or the man command internal shortcuts.
- How to parse (search) for specific words in the manual page
  - using the grep command in combination with the man pages.
- How to redirect output (> and |)
  - we can redirect the output of commands to and from files.
- How to append the output of a command to a file
  - `ls -la > allmyfiles.lst`
- How to use wildcards
  - create files and directories quicker
- For copying and moving multiple files at the same time
  - wildcard
- How to use brace expansion
  - `touch website{1..5}.html`
- For creating entire directory structures in a single command
  - `mkdir -p`