

# Question 1

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## awk

- Description:
  - awk is useful for manipulation of data files, text retrieval and processing, and for prototyping and experimenting with algorithms.
- Formula:
  - `awk + options + awk command + file`
- Examples:
  - how to print the first field of a file:
    - `awk -F:' '{print $1}' /etc/passwd`
  - How to start printing from a different line
    - `awk 'NR > 3 {print}' /etc/passwd`
  - how to change a field to upper case:
    - `awk -F: '{print toupper($1)}'`

## cat

- Description:
  - used for seeing the content of a file. Also used for concatenating files
- Formula:
  - `cat + options + file or files to view/concatenate`
- Examples:
  - how to see the 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:
  - copy files and directories
- Formula:
  - `cp + options + file or files + destination`
- Examples:
  - how to copy a file
    - `cp file.txt ~/Documents/files/`
  - how to copy a directory
    - `cp ~/Documents/files/ ~/Documents/files2/`
  - how to copy only when the SOURCE file is newer than the destination file or when the destination file is missing
    - `cp -u file.txt ~/Documents/files/`

## cut

- Description:
  - remove sections from each line of files
- Formula:
  - `cut + options + file or files`
- Examples:
  - how to cut only with specific bytes
    - `cut -b 1,2,3 state.txt`
  - how to only cut by character column
    - `cut -c 2,5,7 state.txt`

## grep

- Description:
  - grep searches for PATTERNS in each FILE and prints each line that matches a pattern.
- Formula:
  - `grep + options + pattern + file`
- Examples:
  - how to look for the word pie in a file
    - `grep "pie" ~/Documents/Recipies1.txt`
  - how to look for the word pie in multiple files
    - `grep "pie" ~/Documents/Recipies*`
  - how to look for the word pie without case sensitivity
    - `grep -i "pie" ~/Documents/Recipies.txt`

## head

- Description:
  - output the first part of files
- Formula:
  - `head + options + file or files`
- Examples:
  - how to show the first ten lines in a file
    - `head example.txt`
  - how to show the first 5 lines in a file
    - `head -n 5 example.txt`
  - how to show the first 5 characters in a file
    - `head -c 5 example.txt`

## ls

- Description:
  - Lists information about files and directories
- Formula:
  - `ls + options + file or files/directories`
- Examples:
  - how to long list

- `ls -l ~/Documents/`
- how to view hidden files
  - `ls -a ~/Documents/`
- how to long list as human readable
  - `ls -lh ~/Documents/`

## man

- Description:
  - an interface to the system reference manuals
- Formula:
  - `man + options + command`
- Examples:
  - how to view a commands manual
    - `man ls`
  - how to view section 2 of the manual
    - `man 2 ls`
  - how to instantly find the command
    - `man -f ls`

## mkdir

- Description: make directories
  - make directories
- Formula:
  - `mkdir + options + dirctory or directories`
- Examples:
  - how to make a directory
    - `mkdir ~/Documents/examplefolder/`
  - how to make also make parent directories
    - `mkdir -p ~/Documents/examplefolder/examplefolder2`
  - displays a message
    - `mkdir -v ~/Documents/examplefolder/`

## mv

- Description:
  - moves and renames files
- Formula:
  - `mv + options + file or files + destination`
- Examples:
  - how to move a file
    - `mv example.txt ~/Documents/(example.txt?)`
  - how to rename a file
    - `mv example.txt ~/Documents/(rename.txt?)`
  - aks for confirmation
    - `mv -i example.txt ~/Documents/(example.txt?)`

## tac

- Description:
  - concatenate and print files in reverse
- Formula:
  - `tac + options + file or files`
- Examples:
  - how to print a file in reverse
    - `tac example.txt`
  - separator
    - `tac -b concat.txt tacexample.txt`
  - no separator
    - `tac -r concat.txt tacexample.txt`

## tail

- Description:
  - output the last part of files
- Formula:
  - `tail + options + file or files`
- Examples:
  - how to print the last 10 lines of a file
    - `tail example.txt`
  - how to print the last 5 lines of a file
    - `tail -n 5 example.txt`
  - how to print the last 5 characters of a file
    - `tail -c 5 example.txt`

## touch

- Description:
  - make a file
- Formula:
  - `touch + options + file or files`
- Examples:
  - how to make a file
    - `touch ~/Documents/example.txt`
  - how to change access time
    - `touch -a fileName`
  - how to update modification time
    - `touch -c fileName`

## tr

- Description:
  - translating or deleting characters.
- Formula:
  - `tr [OPTION] SET1 [SET2]`

- Examples:
  - how to translate lowercase to uppercase
    - `greekfile | tr [a-z] [A-Z]`
  - How to translate white-space characters to tabs
    - `echo "Welcome To GeeksforGeeks" | tr [:space:] "\t"`
  - How to translate braces into parenthesis
    - `tr "{}" "()" <greekfile >newfile.txt`

## tree

- Description:
  - visually display parenthood
- Formula:
  - `tree + options + directory or directories`
- Examples:
  - how to show parenthood
    - `tree ~/Documents/`
  - list with a pattern
    - `tree -P sample*`
  - list with permissions
    - `tree -p ./GFG`

## vim/nano

- Description:
  - text editor
- Formula:
  - `vim/nano + options + file or files`
- Examples:
  - vim
    - more powerful/harder to learn
  - nano
    - less powerful/easier to learn