

# ASSIGNMENT-1

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The Shell is made to work with the following commands:-

## **pwd**

This command is used to display the current working directory. The 2 options are:

- 1.L: Use pwd from the environment.
- 2.P: Implements pwd normally.

It checks against passing any invalid options to command or if any arguments are passed, an error message is displayed as pwd does not accept any arguments.

## **cd**

This command is used to change the current working directory of the system. The 2 options are:

- 1.L: Implements cd using chdir()
- 2.P: First resolves the path, and then calls chdir()

The path should be mentioned after flags are set. In case an invalid path is passed, an error is displayed. If no path is specified, home directory is used by default

## echo

This command is used to display the output to the standard output buffer. Pass the required output as arguments. The 2 options are:

- 1.n: does not insert newline at the end
- 2.e: enable the interpretation of the escape commands

If input text has a “” around it, it is removed and the text is displayed as it is. Also if there is more than one space, it is removed from the text. Any escape sequence is always interpreted as long as the -e option is selected.

## ls

This command is used to display the files and directories present in the current directory. Pass the name of the directory to show. The 2 options are:

- 1.a: display all the files present in the directory
- 2.l: displays the contents of the directory in a new line for each

If a file is passed instead, a “directory not found” error is displayed. If no directory is found, it provides a list of contents for the current directory. Also, it checks for any invalid options or directories passed. User can specify multiple directories.

## cat

This command can be used to view the contents of a file. Pass the name of the file(s) to be run. The 2 options available are:

- 1.n: enumerate the lines of the file
- 2.E: put a ‘\$’ at the end of each line

If a directory is passed instead of file, an appropriate error message is displayed. Also, if any invalid option is chosen or file name is not specified, then an error message is displayed. User can specify multiple files to view.

## **date**

This command can be used to view the current system date and time. The 2 options available are:

- 1.u: Print the current UTC time
- 2.I: Only display the current date.

If both u and I commands are passed, only the 'I' option is displayed. If any other option is selected, an appropriate error message is displayed.

## **rm**

This command can be used to delete some files. Pass the path to files as arguments. The 2 options available are:

- 1.f: forcefully delete all the files
- 2.v: Provide verbose for current command

If a directory is passed, an error message is displayed. If the 'f' option is selected, everything is deleted as long as the file exists, without showing an error message for the missing file. User can specify multiple files at once

## **mkdir**

This command can be used to make new directories in the current folder. The 2 options available are:

- 1.p: make the required parent directory along with the required directory.
- 2.v: Provide verbose for current command

If a directory path is mentioned, but 'p' option isn't chosen, an error message is displayed. If any invalid option is chosen or insufficient arguments are passed, an error message is displayed. User can specify multiple directories at once

## Code execution:

Begin by opening the proper folder. First, run the makefile by using the command "make". This will compile all the required files. Then, execute the shell by typing "./main".

This will start the terminal. To run a command, first write the command, then specify the options to be chosen (some commands work with options specified in between, while others need them in between). Also some commands allow passing multiple arguments, while some don't.

To run a command through pthreads, add a '&t' at the end of the command, separated by a space. The command will then execute, or show the appropriate error message.