

Assignment 1

Documentation

1) Internal Commands:

i) echo command:

"echo" command in linux is used to display lines of text/string that are passed as an argument. It can be used to display the string which is given with or without quotation marks("").However, the quotation marks are not displayed when the string message is printed.

Incomplete quotations are also handled.

Flags:

- The user can enter as many arguments in the string message of the echo command.
- If incorrect use of flags is demonstrated then the flag is evaluated as a string.

-n: If the command is of the form "echo -n", then the linux command prompt is continued in the very next line itself.

If the command has the correct syntax "echo -n "message", then the string is printed and the linux command prompt will pop at the very same time.

-e: It implements the escape sequences such as \n ,\t etc in the string message. The basic demonstration of all these commands is shown in the below figure.

ii) cd command:

The “cd” command allows the user to change directories. The cd command takes an argument, usually the name of the folder you want to move to, so the full command is cd your-directory .

Assumption: Flag can only be present at argument 1

Flags:

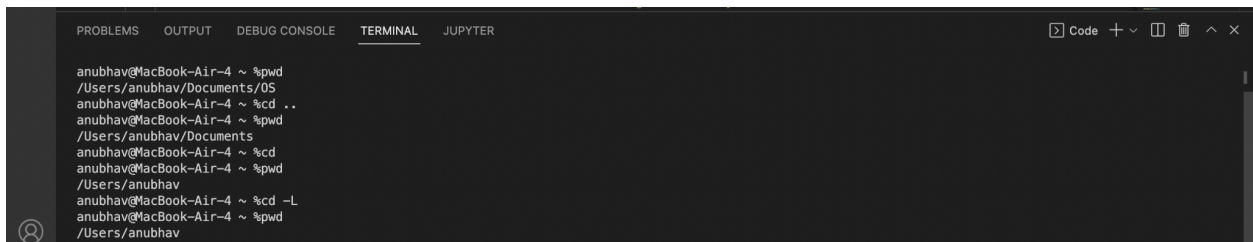
-L: Handle the operand dot-dot logically; symbolic link components shall not be resolved before dot-dot components are processed

- : When a <hyphen-minus> is used as the operand, this

shall be equivalent to the command: cd "\$OLDPWD" && pwd

which changes to the previous working directory and

then writes its name.



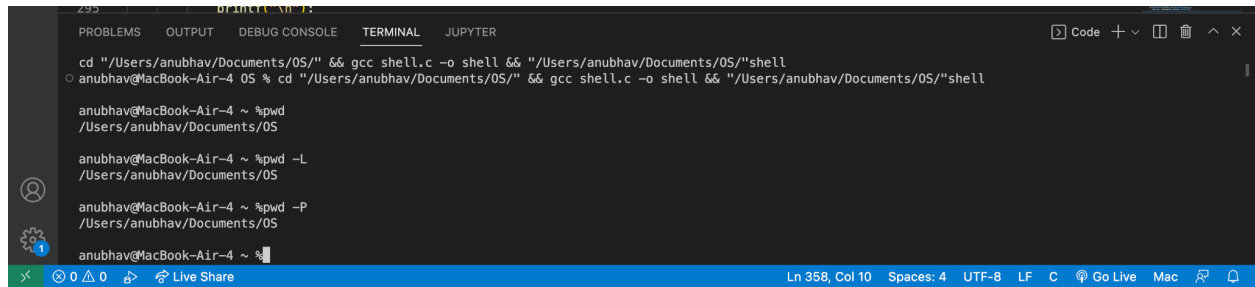
```
anubhav@MacBook-Air-4 ~ % pwd
/Users/anubhav/Documents/OS
anubhav@MacBook-Air-4 ~ % cd ..
anubhav@MacBook-Air-4 ~ % pwd
/Users/anubhav/Documents
anubhav@MacBook-Air-4 ~ % cd
anubhav@MacBook-Air-4 ~ % pwd
/Users/anubhav
anubhav@MacBook-Air-4 ~ % cd -L
anubhav@MacBook-Air-4 ~ % pwd
/Users/anubhav
```

iii) pwd command: prints name of current/working directory.

Flags:

-L: use PWD from environment, even if it contains symlinks

-P: avoid all symlinks



```
295  
cd "/Users/anubhav/Documents/OS/" && gcc shell.c -o shell && "/Users/anubhav/Documents/OS/"shell  
anubhav@MacBook-Air-4 OS % cd "/Users/anubhav/Documents/OS/" && gcc shell.c -o shell && "/Users/anubhav/Documents/OS/"shell  
anubhav@MacBook-Air-4 ~ % pwd  
/Users/anubhav/Documents/OS  
anubhav@MacBook-Air-4 ~ % pwd -L  
/Users/anubhav/Documents/OS  
anubhav@MacBook-Air-4 ~ % pwd -P  
/Users/anubhav/Documents/OS  
anubhav@MacBook-Air-4 ~ %
```

2) External commands:

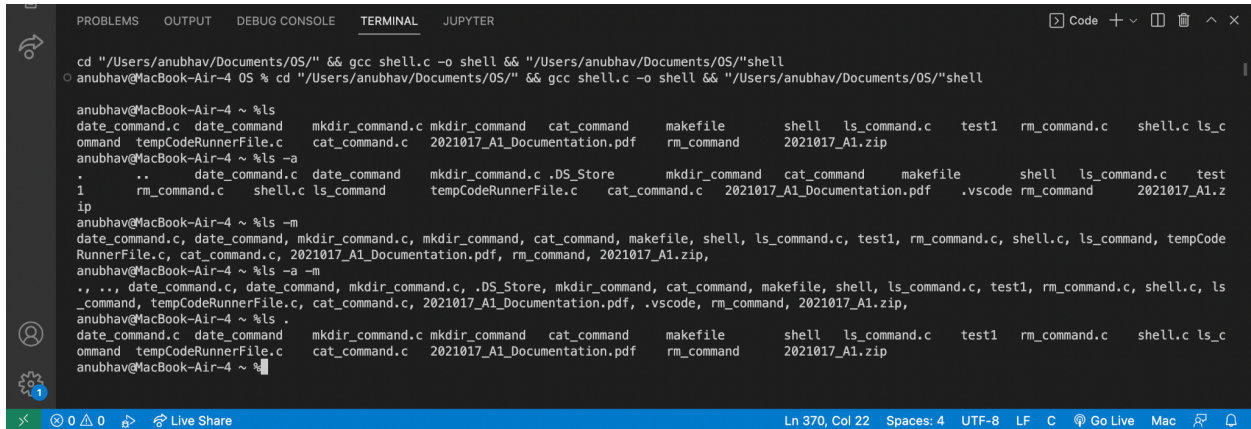
i) **ls command**- list directory contents **Assumption:** The user can enter only two arguments.

The user can enter the flags on any of the two arguments and also two flags at the same arguments are also valid.

Flags:

-m: fill width with a comma separated list of entries.

-a: do not ignore entries starting with ‘.’



```
cd "/Users/anubhav/Documents/05/" && gcc shell.c -o shell && "/Users/anubhav/Documents/05/"shell
anubhav@MacBook-Air-4 05 % cd "/Users/anubhav/Documents/05/" && gcc shell.c -o shell && "/Users/anubhav/Documents/05/"shell

anubhav@MacBook-Air-4 ~ % ls
date_command.c date_command mkdir_command.c mkdir_command cat_command makefile shell ls_command.c test1 rm_command.c shell.c ls_c
ommand tempCodeRunnerFile.c cat_command.c 2021017_A1_Documentation.pdf rm_command 2021017_A1.zip
anubhav@MacBook-Air-4 ~ % ls -la
. . date_command.c date_command mkdir_command.c .DS_Store mkdir_command cat_command makefile shell ls_command.c test
1 rm_command.c shell.c ls_command tempCodeRunnerFile.c cat_command.c 2021017_A1_Documentation.pdf .vscode rm_command 2021017_A1.z
ip
anubhav@MacBook-Air-4 ~ % ls -lm
date_command.c date_command mkdir_command.c mkdir_command cat_command makefile shell ls_command.c test1 rm_command.c shell.c ls_command tempCode
RunnerFile.c cat_command.c 2021017_A1_Documentation.pdf rm_command 2021017_A1.zip
anubhav@MacBook-Air-4 ~ % ls -la -m
. . . date_command.c date_command mkdir_command.c .DS_Store mkdir_command cat_command makefile shell ls_command.c test1 rm_command.c shell.c ls
_command tempCodeRunnerFile.c cat_command.c 2021017_A1_Documentation.pdf .vscode rm_command 2021017_A1.zip
anubhav@MacBook-Air-4 ~ % ls .
date_command.c date_command mkdir_command.c mkdir_command cat_command makefile shell ls_command.c test1 rm_command.c shell.c ls_c
ommand tempCodeRunnerFile.c cat_command.c 2021017_A1_Documentation.pdf rm_command 2021017_A1.zip
anubhav@MacBook-Air-4 ~ %
```

ii) cat command: concatenate files and print on the standard output

Assumption: The user can enter two arguments.

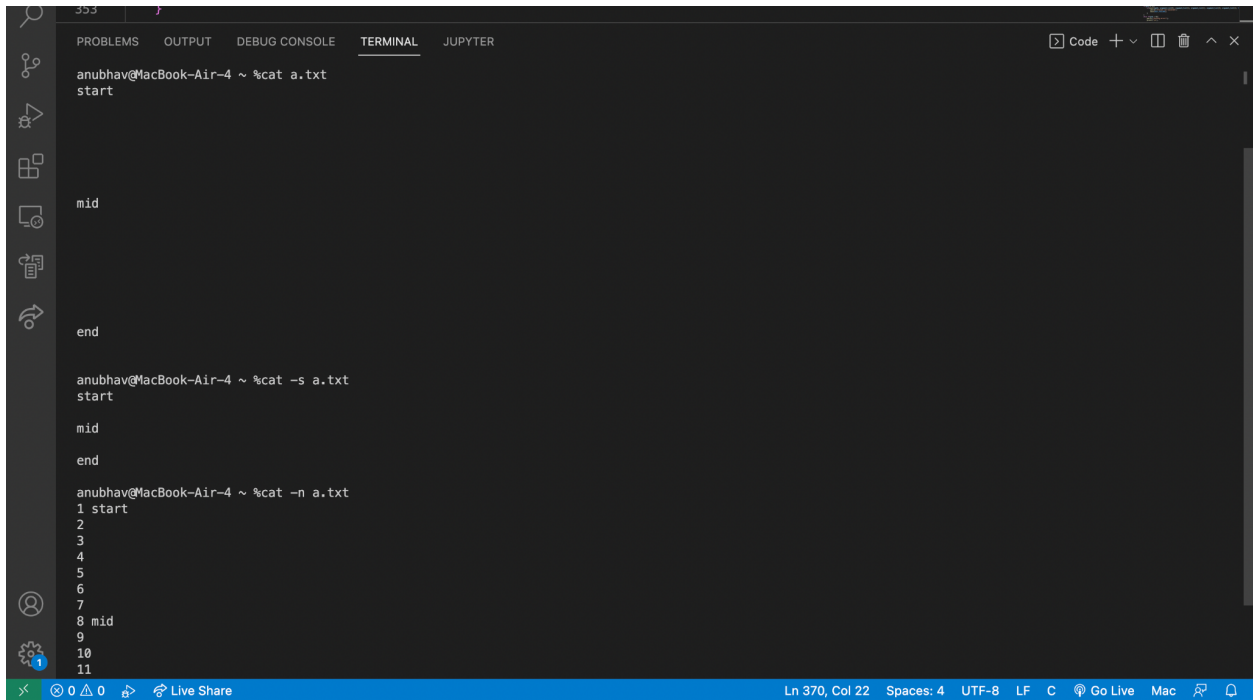
The user can enter flags at both argument one and argument two.

Also handled the case when user didn't enter file name or just enters cat without any flag.

Flags:

-s: removes extra newlines

-n: number all output lines



```
anubhav@MacBook-Air-4 ~ % cat a.txt
start

mid

end

anubhav@MacBook-Air-4 ~ % cat -s a.txt
start

mid

end

anubhav@MacBook-Air-4 ~ % cat -n a.txt
1 start
2
3
4
5
6
7
8 mid
9
10
11
```

iii) **date command**: prints the date or some flags also changes the date and time. Assumption: The user can enter two arguments.

Flags:

-u: prints universal time.

-r [filename]: prints the last modified date of the specified file.



```
anubhav@MacBook-Air-4 ~ % date
Mon Oct 31 23:52:27 2022 IST
anubhav@MacBook-Air-4 ~ % date -u
Mon Oct 31 18:22:30 2022 UTC
anubhav@MacBook-Air-4 ~ % date -r makefile
Mon Oct 31 21:10:00 2022
```

iv) **mkdir command**: It makes the directory specified in arguments.

Assumption: The user can enter three arguments . Flags are only present at the first argument.dm

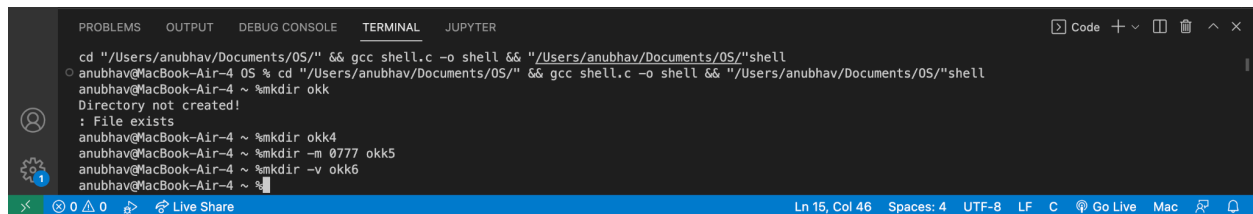
If there is any Invalid or any use of flag at argument two or three a message is prompted at the user screen.

”Assumption: No flags at second or third arguments\n”

Flags:

-m: set file mode ,not a = rwx -umask

-v: print a message for each created directory



```
cd "/Users/anubhav/Documents/OS/" && gcc shell.c -o shell && "/Users/anubhav/Documents/OS/"shell
anubhav@MacBook-Air-4 OS % cd "/Users/anubhav/Documents/OS/" && gcc shell.c -o shell && "/Users/anubhav/Documents/OS/"shell
anubhav@MacBook-Air-4 ~ % mkdir okk
Directory not created!
: File exists
anubhav@MacBook-Air-4 ~ % mkdir okk4
anubhav@MacBook-Air-4 ~ % mkdir -m 0777 okk5
anubhav@MacBook-Air-4 ~ % mkdir -v okk6
anubhav@MacBook-Air-4 ~ %
```

v) rm command: remove files or directories

Assumption: The user can enter two arguments. Flags are only present at the first argument.

If there is any Invalid or any use of flag at argument two a message is prompted at the user screen.

”Assumption: No flags at argument\n”

Flags:

-f: ignore non-existent files and arguments, never prompt.

-v: print a message for each created directory.

