OS

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2019399

ASSIGNMENT 2: DOCUMENTATION:

SUMMARY:

This assignments shows a command line interface of Unix/Linux. The program is written in c language. Initially there is a while loop for user input until there is an exit call. Inside every external command there is pid process to check status and how the program' s child process works. Usage of fork() and execv() is to initiate a child process and call the external command from different c file. The execv takes two arguments; one is the executable file of the external command present in a different c file and second is the input arguments to the c file. In my case the input argument is null because every input is taken in the main of c file and not passed to main. Once the child proces is executed the parent process waits for null time and nothing operates in the parent process.

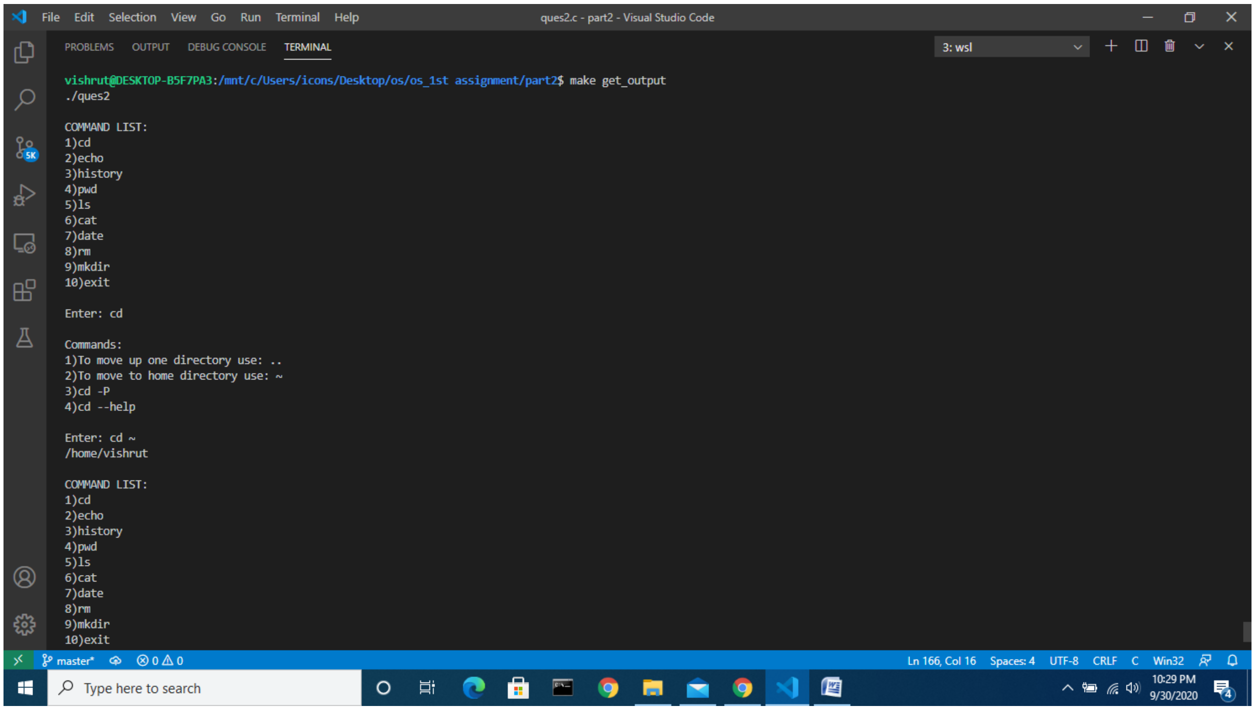
ERROR REPORTING:

Next we move to the commands. Each command has atleast 2 options to work on and handled error reporting strategy. "Invalid syntax" or "Invalid command" or"Error" is shown once there is reporting. In all these cases the program exits. In commands like "rm" and "mkdir" may show file errror and directory cannot be created respectively. In such cases the command is exited not the program. Every command has error of syntax and many sub-errors inside as given examples previously.

Some other features: History.txt file has the history of every command. Delimiter has been used. Makefile for compilation and pausing at each phase.Although running the program makes it very clear. Also all internal commands and external commands can run in one go but there is an assumption that try not to run an external command after an internal due to over –reading between internal to external. Apart from that all internal commands can run after external easily.All warnings must be ignored.

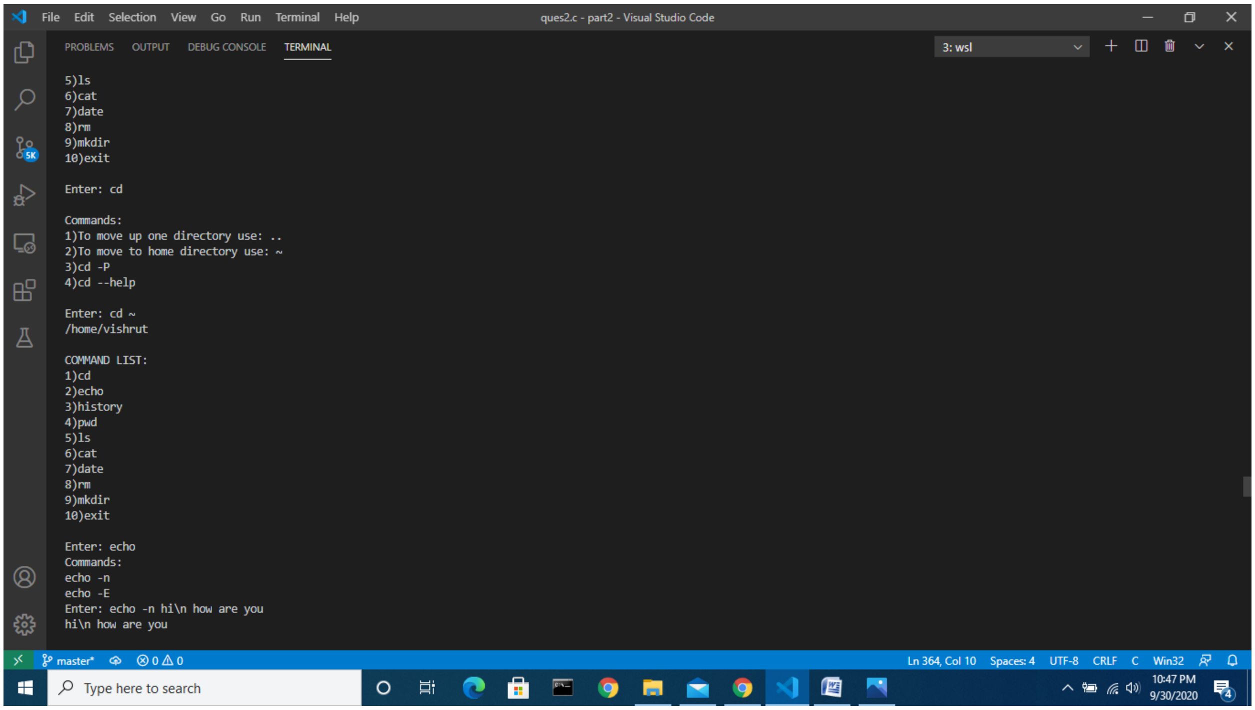
Screenshots of all commands and their basic working is attached for your reference:-

cd command


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master* ⊗0 ⚠0
Ln 166, Col 16 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:29 PM
9/30/2020

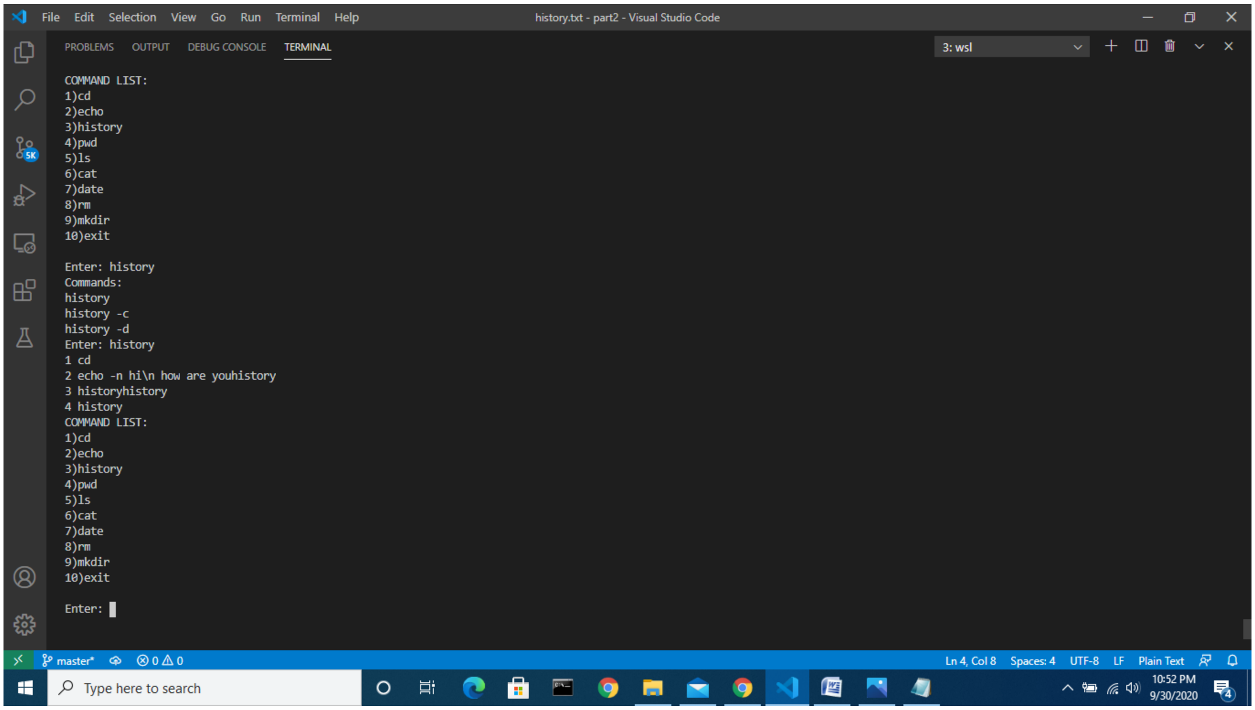
```
vishrut@DESKTOP-B5F7PA3:/mnt/c/Users/icons/Desktop/os/os_1st assignment/part2$ make get_output
./ques2

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: cd

Commands:
1)To move up one directory use: ..
2)To move to home directory use: ~
3)cd -P
4)cd --help

Enter: cd ~
/home/vishrut

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit
```

echo command


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master* ⊗0 ⚠0
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:47 PM
9/30/2020

```
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: cd

Commands:
1)To move up one directory use: ..
2)To move to home directory use: ~
3)cd -P
4)cd --help

Enter: cd ~
/home/vishrut

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: echo
Commands:
echo -n
echo -E
Enter: echo -n hi\n how are you
hi\n how are you
```

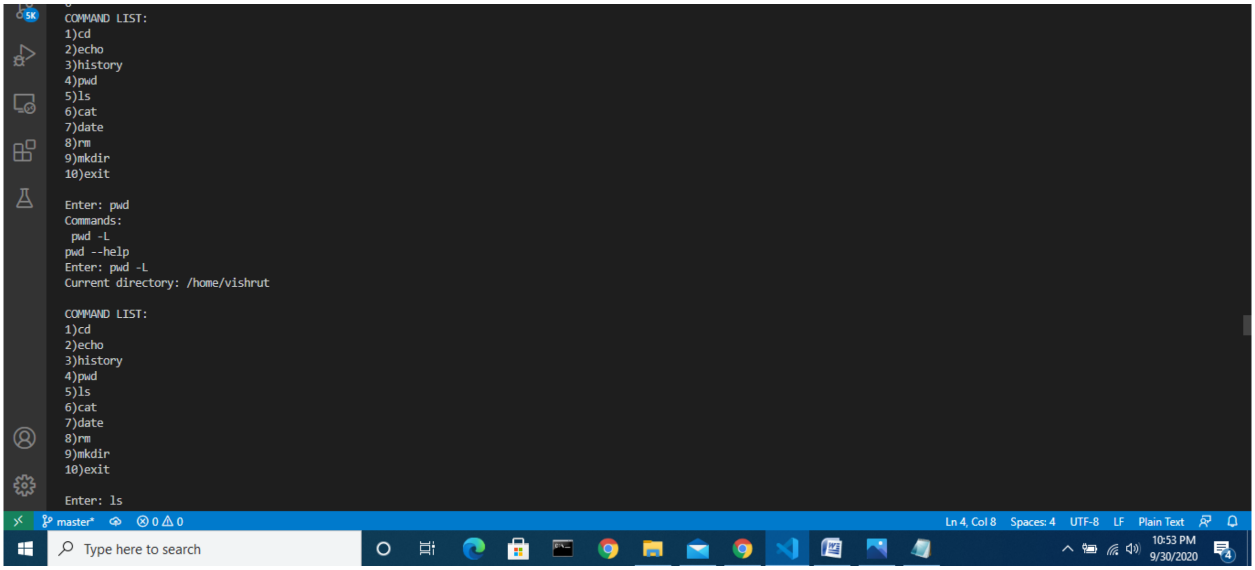
history command



history.txt - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 4, Col 8 Spaces: 4 UTF-8 LF Plain Text
Type here to search
10:52 PM
9/30/2020

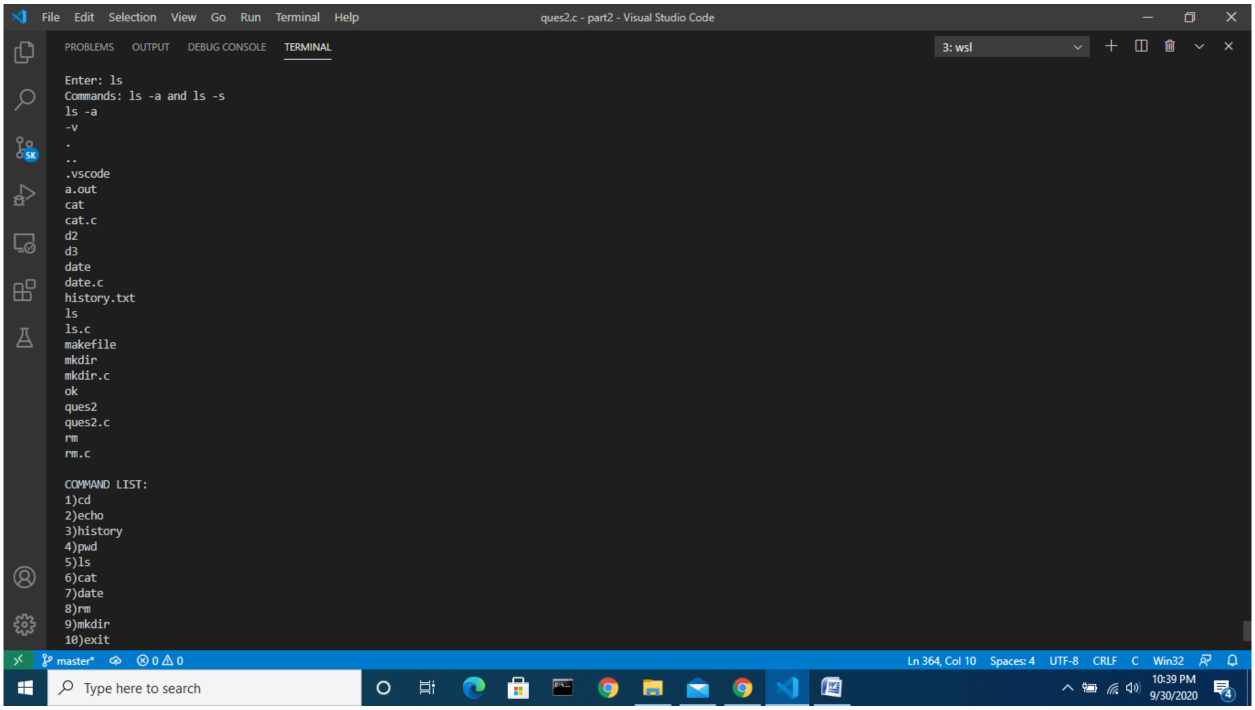
```
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: history
Commands:
history
history -c
history -d
Enter: history
1 cd
2 echo -n hi\n how are youhistory
3 historyhistory
4 history
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: 
```

pwd command



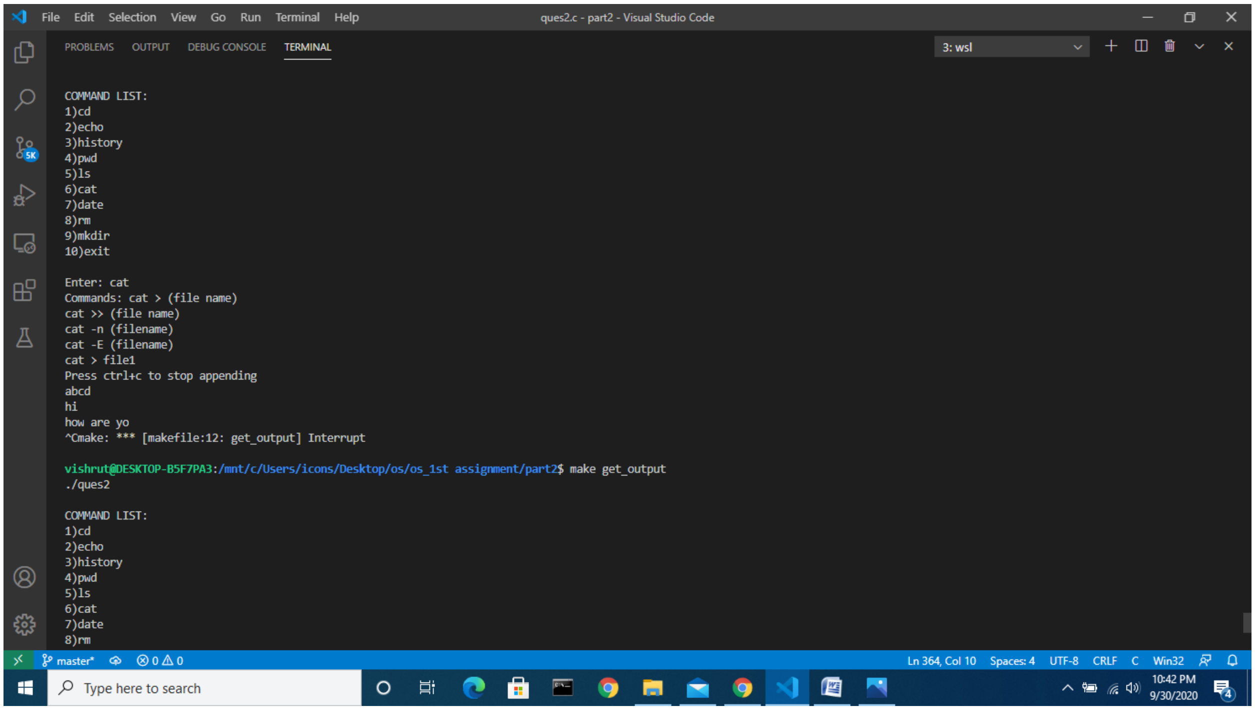
```
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: pwd
Commands:
 pwd -L
pwd --help
Enter: pwd -L
Current directory: /home/vishrut

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: ls
```

ls command

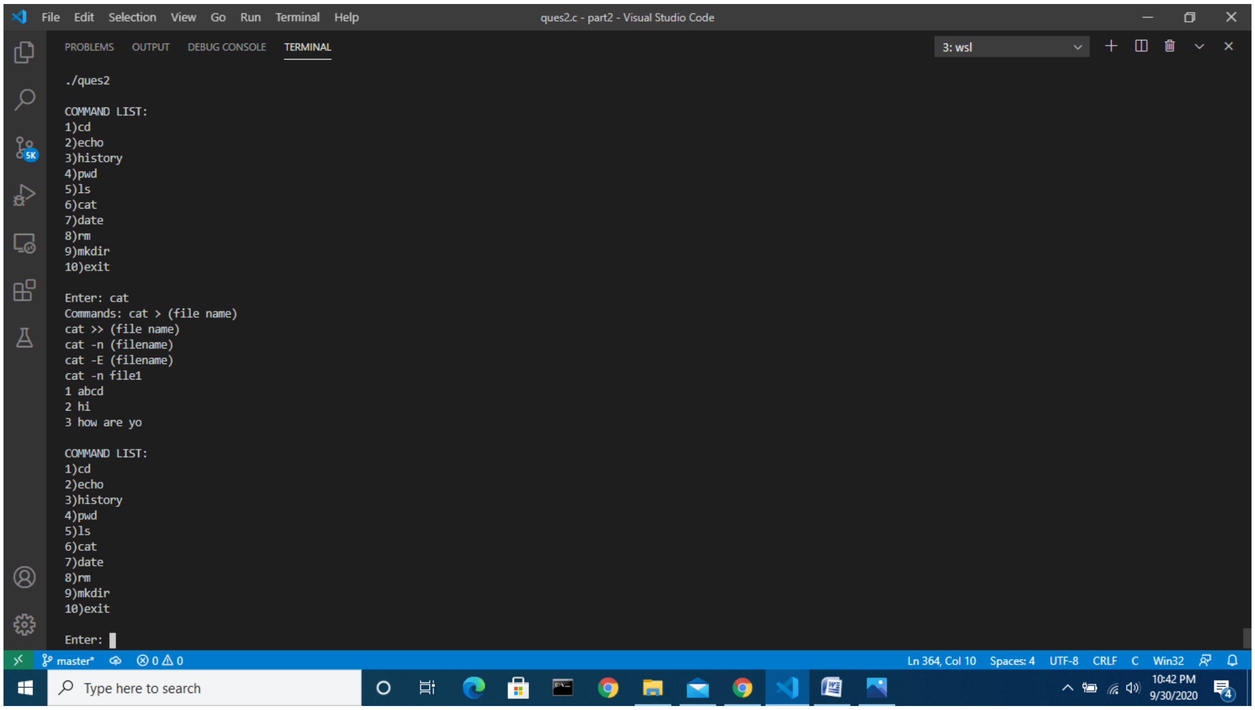

File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:39 PM
9/30/2020

```
Enter: ls
Commands: ls -a and ls -s
ls -a
-v
.
..
.vscode
a.out
cat
cat.c
d2
d3
date
date.c
history.txt
ls
ls.c
makefile
mkdir
mkdir.c
ok
ques2
ques2.c
rm
rm.c

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit
```

cat command

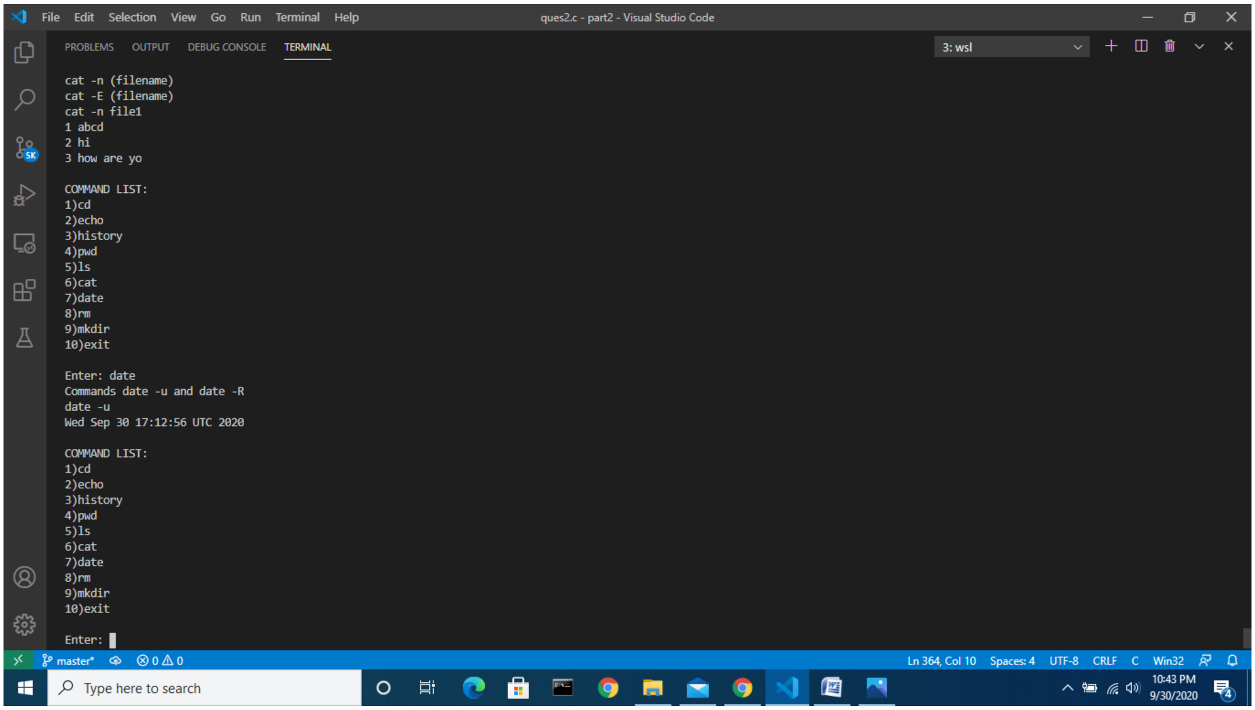

File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:42 PM
9/30/2020

```
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: cat
Commands: cat > (file name)
cat >> (file name)
cat -n (filename)
cat -E (filename)
cat > file1
Press ctrl+c to stop appending
abcd
hi
how are yo
^Cmake: *** [makefile:12: get_output] Interrupt

vishrut@DESKTOP-B5F7PA3:/mnt/c/Users/icons/Desktop/os/os_1st assignment/part2$ make get_output
./ques2

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
```


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:42 PM
9/30/2020

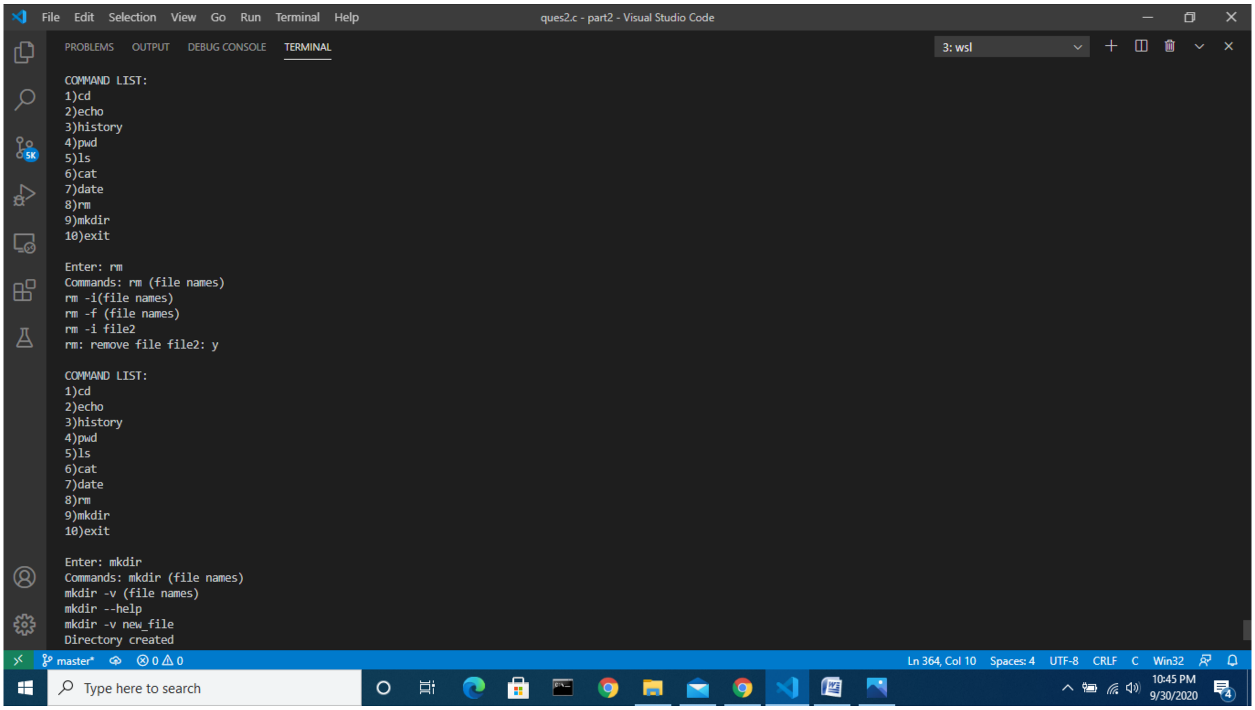
```
./ques2

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: cat
Commands: cat > (file name)
cat >> (file name)
cat -n (filename)
cat -E (filename)
cat -n file1
1 abcd
2 hi
3 how are yo

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter:
```

date command


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:43 PM
9/30/2020

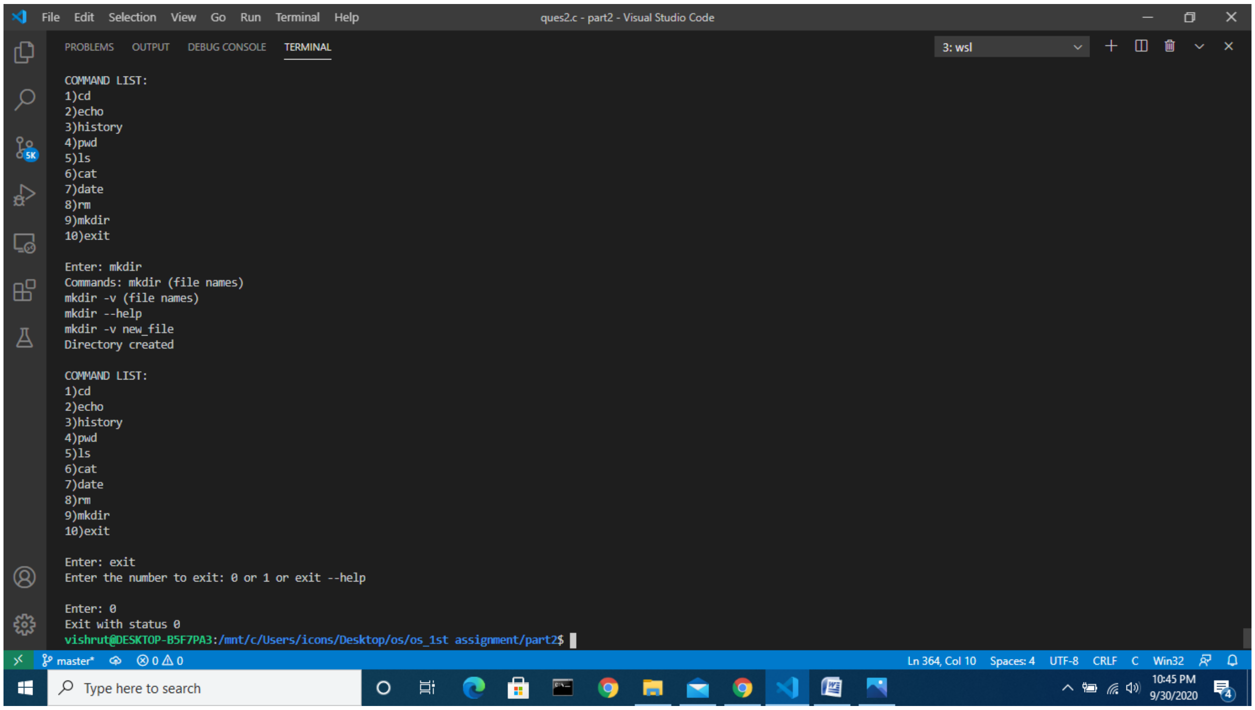
```
cat -n (filename)
cat -E (filename)
cat -n file1
1 abcd
2 hi
3 how are yo

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: date
Commands date -u and date -R
date -u
Wed Sep 30 17:12:56 UTC 2020

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter:
```

rm command


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:45 PM
9/30/2020

```
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: rm
Commands: rm (file names)
rm -i(file names)
rm -f (file names)
rm -i file2
rm: remove file file2: y

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: mkdir
Commands: mkdir (file names)
mkdir -v (file names)
mkdir --help
mkdir -v new_file
Directory created
```

mkdir command and exit command


File Edit Selection View Go Run Terminal Help
ques2.c - part2 - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
3: wsl
master*
Ln 364, Col 10 Spaces: 4 UTF-8 CRLF C Win32
Type here to search
10:45 PM
9/30/2020

```
COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: mkdir
Commands: mkdir (file names)
mkdir -v (file names)
mkdir --help
mkdir -v new_file
Directory created

COMMAND LIST:
1)cd
2)echo
3)history
4)pwd
5)ls
6)cat
7)date
8)rm
9)mkdir
10)exit

Enter: exit
Enter the number to exit: 0 or 1 or exit --help

Enter: 0
Exit with status 0
vishrut@DESKTOP-B5F7PA3:/mnt/c/Users/icons/Desktop/os/os_1st assignment/part2$
```