Name: Mahmoud Mohammed Fathallah
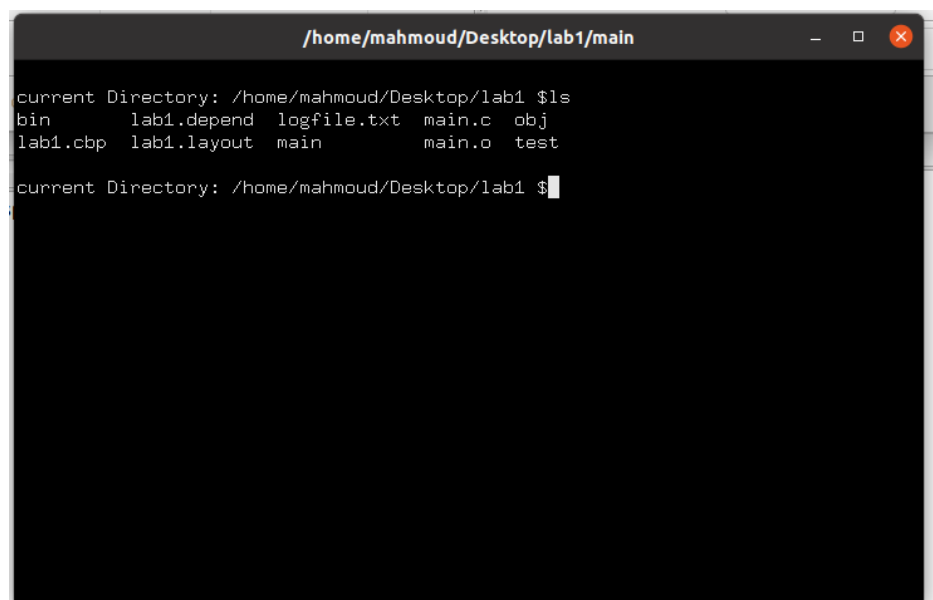
ID: 19016582

Lab1 report

Main functions:

- getcomm(): function to get the command from user and parse it.
- setup_environment(): function to get current directory at the beginning of the program.
- execute_shell_builtin(): function to execute built in commands in shell like cd,exit and export.
- execute_command(): function to execute commands which are not built in like ls, mkdir….,etc.
- on_child_exit(): this function reaps the zombie processes and logs the terminated processes in the log file.
- shell(): this function is the main loop in the program which takes user input and parse it and execute it, it is an infinite loop that exits on the command exite.
- replacevar(): function to replace the variable with its value.

Test cases:


```
/home/mahmoud/Desktop/lab1/main

current Directory: /home/mahmoud/Desktop/lab1 $ls
bin        lab1.depend  logfile.txt  main.c  obj
lab1.cbp   lab1.layout  main                 main.o  test

current Directory: /home/mahmoud/Desktop/lab1 $
```

```
current Directory: /home/mahmoud/Desktop/lab1 $ls
bin         lab1.depend  logfile.txt  main.c  obj
lab1.cbp  lab1.layout  main              main.o  test

current Directory: /home/mahmoud/Desktop/lab1 $cd ..

current Directory: /home/mahmoud/Desktop $
```

```
current Directory: /home/mahmoud/Desktop/lab1 $ls
bin         lab1.depend  logfile.txt  main.c  obj
lab1.cbp  lab1.layout  main              main.o  test

current Directory: /home/mahmoud/Desktop/lab1 $cd ..

current Directory: /home/mahmoud/Desktop $hey

command is not recognised!
current Directory: /home/mahmoud/Desktop $
```

```
current Directory: /home/mahmoud/Desktop/lab1 $ls
bin         lab1.depend   logfile.txt   main.c   obj
lab1.cbp   lab1.layout   main          main.o   test

current Directory: /home/mahmoud/Desktop/lab1 $cd ..

current Directory: /home/mahmoud/Desktop $hey

command is not recognised!
current Directory: /home/mahmoud/Desktop $export x=-l

current Directory: /home/mahmoud/Desktop $ls $x
total 36
drwxr-xr-x 5 mahmoud mahmoud  4096 □□□ 24 23:56 lab1
-rw-rw-r-- 1 mahmoud mahmoud 25226 □□□ 24 23:37 lab1.zip
drwxr-xr-x 4 mahmoud mahmoud  4096 □□□ 21 21:22 mm

current Directory: /home/mahmoud/Desktop $
```