Promotion 2023

Année A4

Rapport Operating Systems Project

Souhail AIT LAHCEN

Rapport Operating Systems Project
Année 4

Table des matières

Report Operating Systems Project 2021-2022

Souhail AIT LAHCEN

31 Décembre 2021

I Introduction

For this project, I need to create a interactive shell.
We can fin my script, report etc.. in my repository GitHub :
`https://github.com/Souhail99/Project-Operating-Systems`.

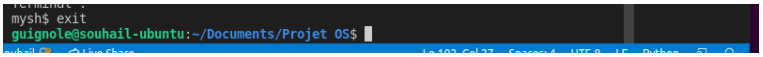
Also, you don't need (in your terminal) to write **/usr/bin/python** before the name of my code, because I use this :

This first line is for the user want to use the project without of need to write (/bin/ python etc...).

II Basic Shell

First, our script (shell) need to basic, If I run my script I have this :

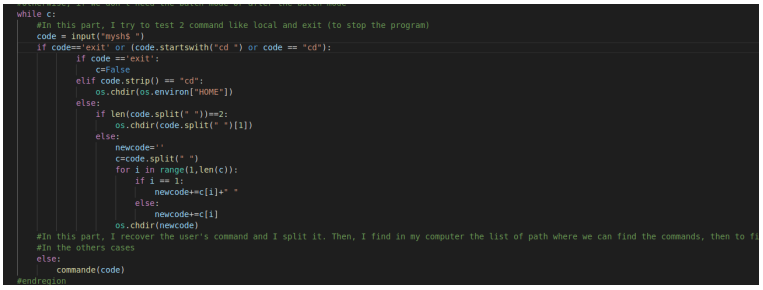
For exit, I need to write **exit** :



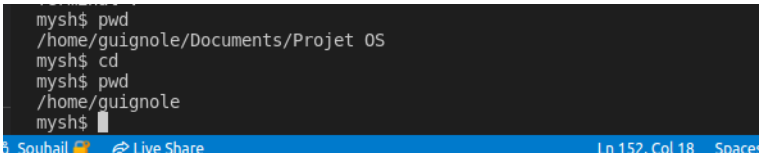
III Built-in Commands

In this project, we need to implement built-in command like **cd, pwd, and exit**. First, I define some variable like c :

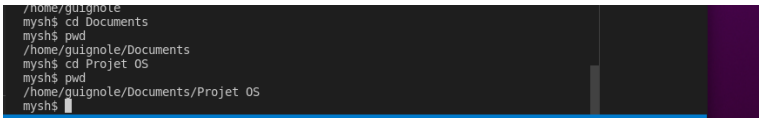
This variable is useful for exit command, while the user don't write exit the script run :



As you can see, the while loop depend of c.
So for **cd** is more complex, we need to unsterstand three cases, as you can see in my script, if the command is only cd I return in the HOME file like this :



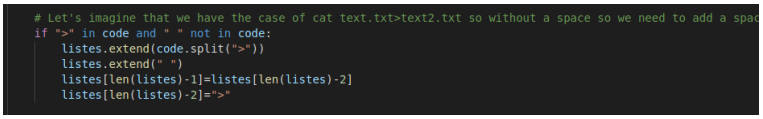
And I return in the previous directory like this :



So the second or the third case is for the case if the user put several direcotory like in the previous pictures : **cd Documents and cd Projet OS**.

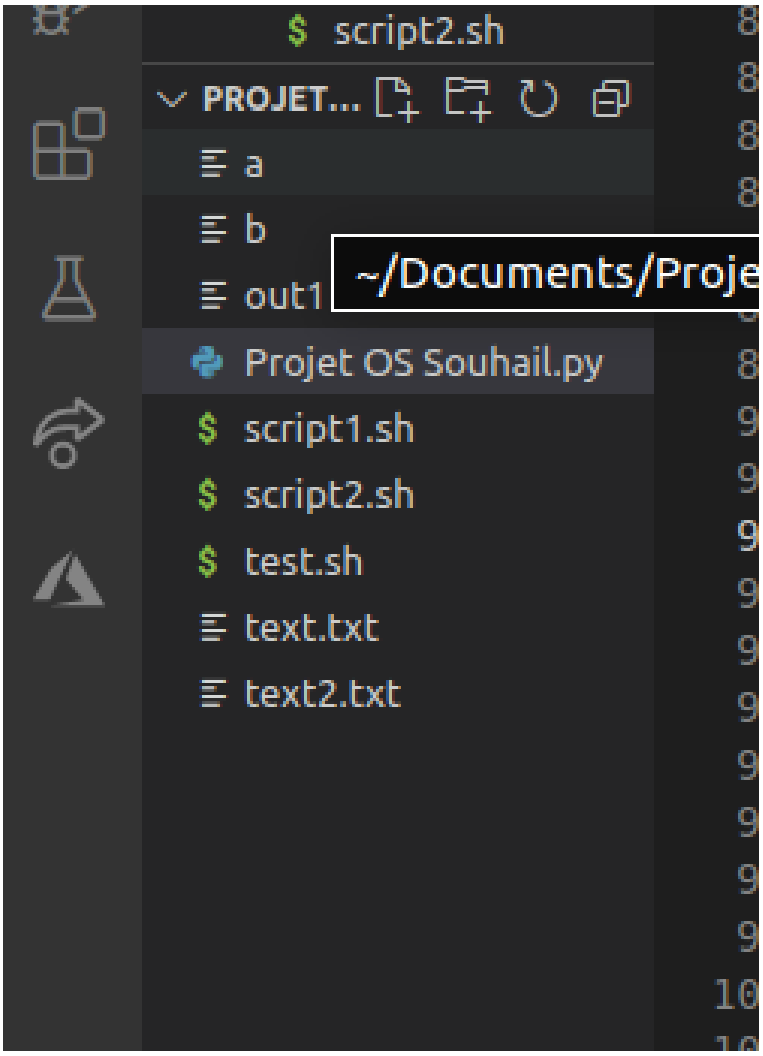
IV Redirection

We need to have the possibility to write some redirections, a simple example is **>**, so I resolve this with that :

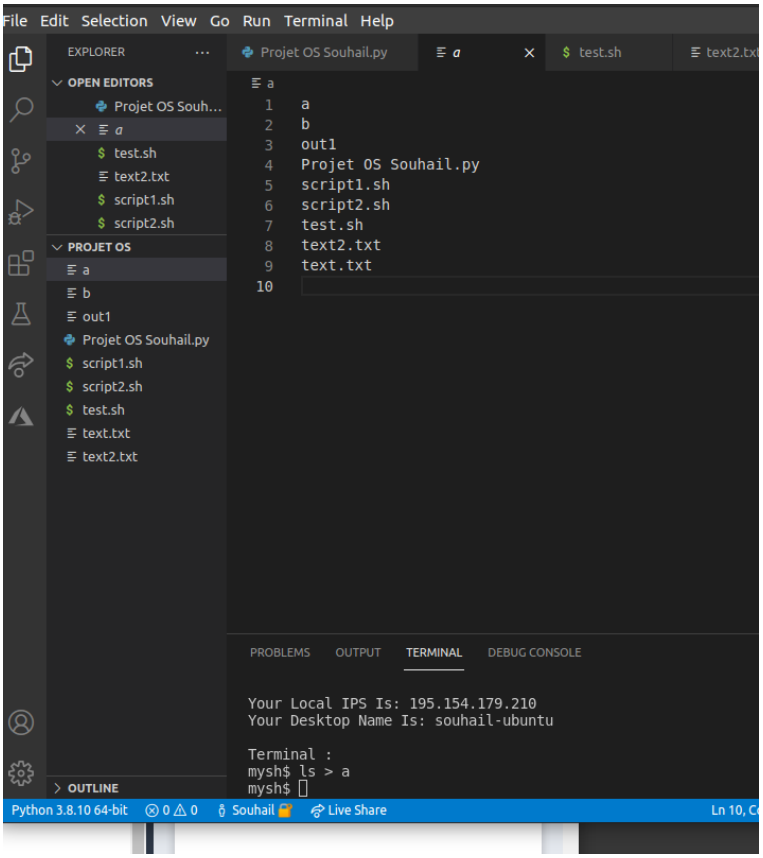


And an example is this :

a is in the list of files :

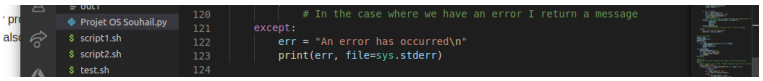


Finally, it contains this :



V Program Errors

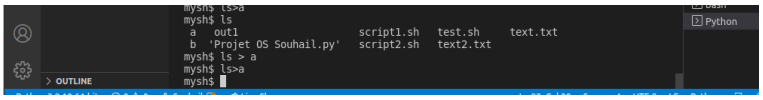
We need to return an error with this :
print(err, file=sys.stderr)
so the code is :



An example :

VI White Spaces

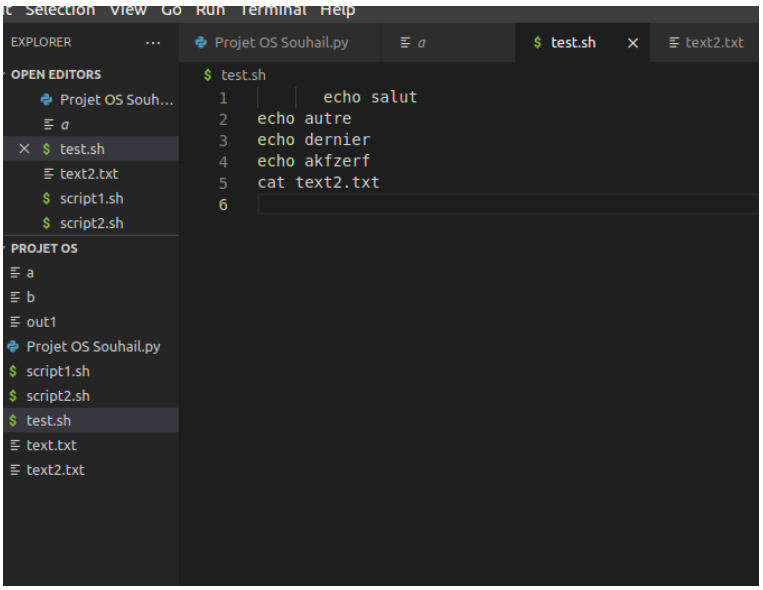
So yes, even if, we write a command we need to permit the user to write command like :
mysh$ ls
mysh$ ls > a
mysh$ ls>a
So, as we can see it works :



Finally, the three commands work.

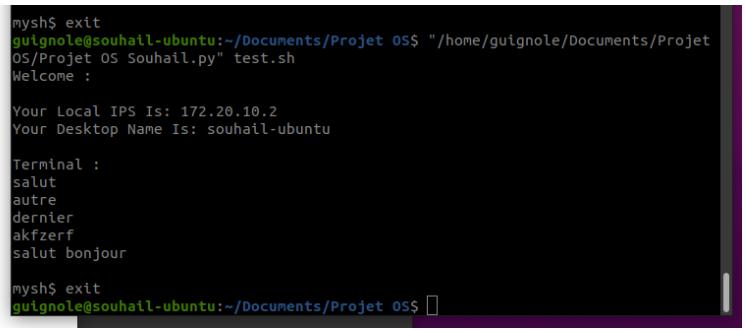
VII Batch Mode

To conclude, I want to speak about the **Batch Mode** : I test the batch mode with this file :



Then, with this code :

I test it in the linux terminal, so I have this :



It works !

VIII Test Case

For this part, let's imagine we want to use a script sh like that :

Script 1:

```
# script1.sh
echoerr() { echo "$@" 1>&2; }
echoerr hello world
```

So, this is work in my script because I have this :