



# Simple Shell Report

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# Overview:

A shell is simply a program that conveniently allows you to run other programs. Read up on your favorite shell to see what it does.

The shell commands supported

The internal shell command "exit" which terminates the shell.

A command with no arguments:  
Example: ls, cp, rm ...etc

A command with arguments:  
Example: ls -l

A command, with or without arguments, executed in the background using &.  
Example: firefox &

# How it works

## Step one

is getting the input command from the user and split it into words as check if it will be a background process.

## Step two

fork a new child process and passes the the needed parameters to the function `execvp`.

## Step three

at case the child process is executed in the main thread then the parent process is blocked and wait until the child process terminates otherwise get ready to get the next instruction.

Major Functions:

## 1- split

this function is used to split the input instruction into words and check if the child process should be executed in the background if the instruction ends with &.

it uses a 2d dynamic array which duplicates its size when it reaches the the end of the array.

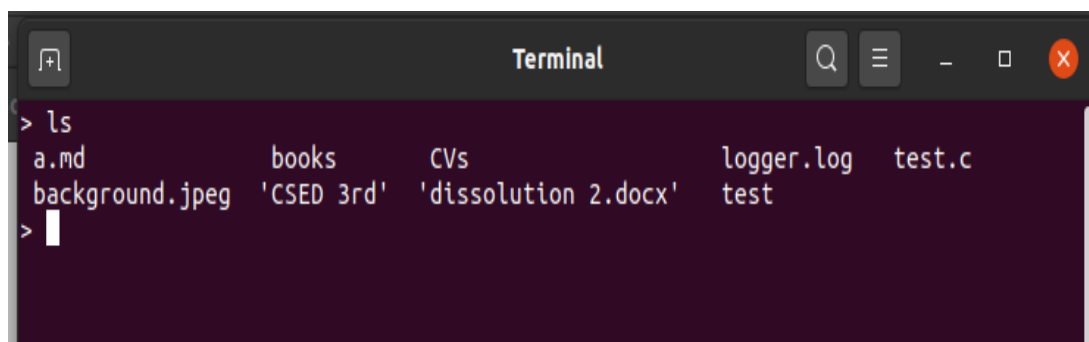
## 2- handler

it kills the child process if it's in zombie state and append to logger.log file "Child process was terminated".

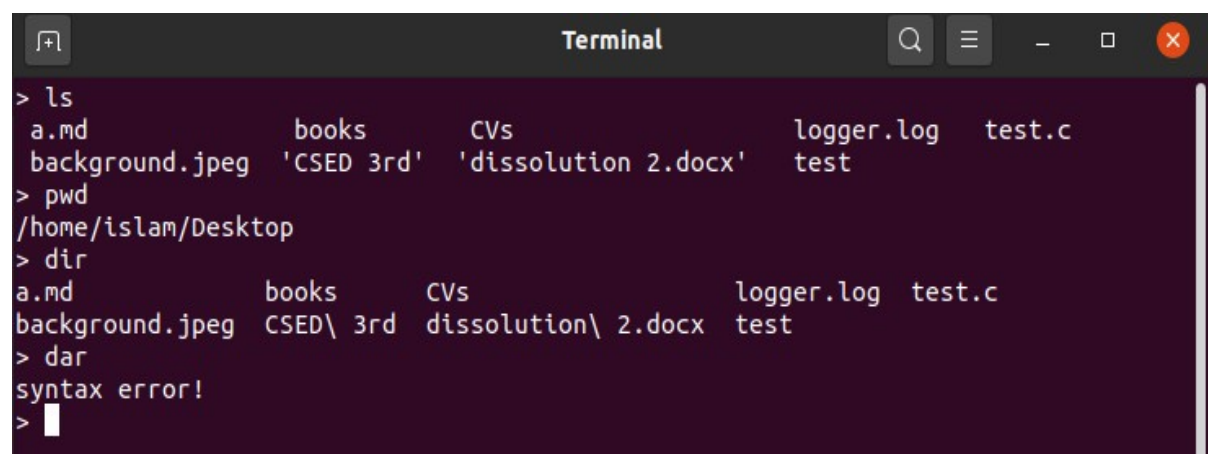
## 3- execute

take a 2d array of the arguments, then fork a new child process pass the input to `execvp`.

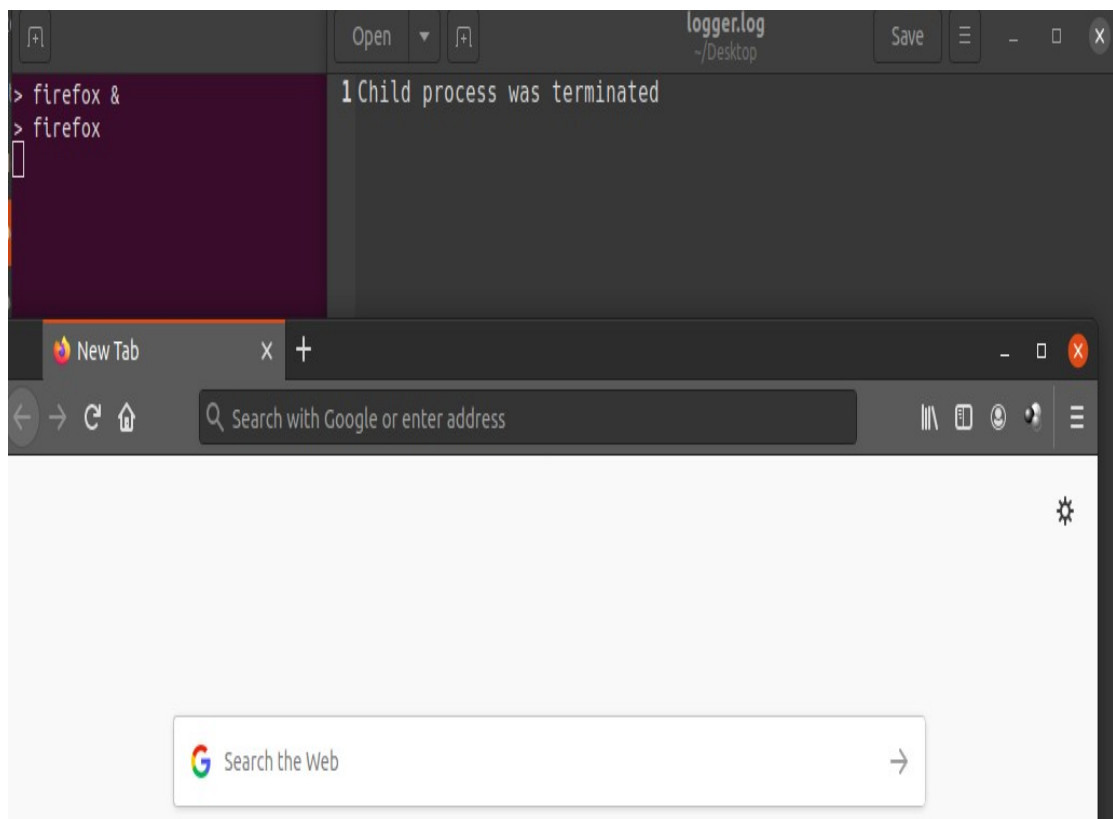
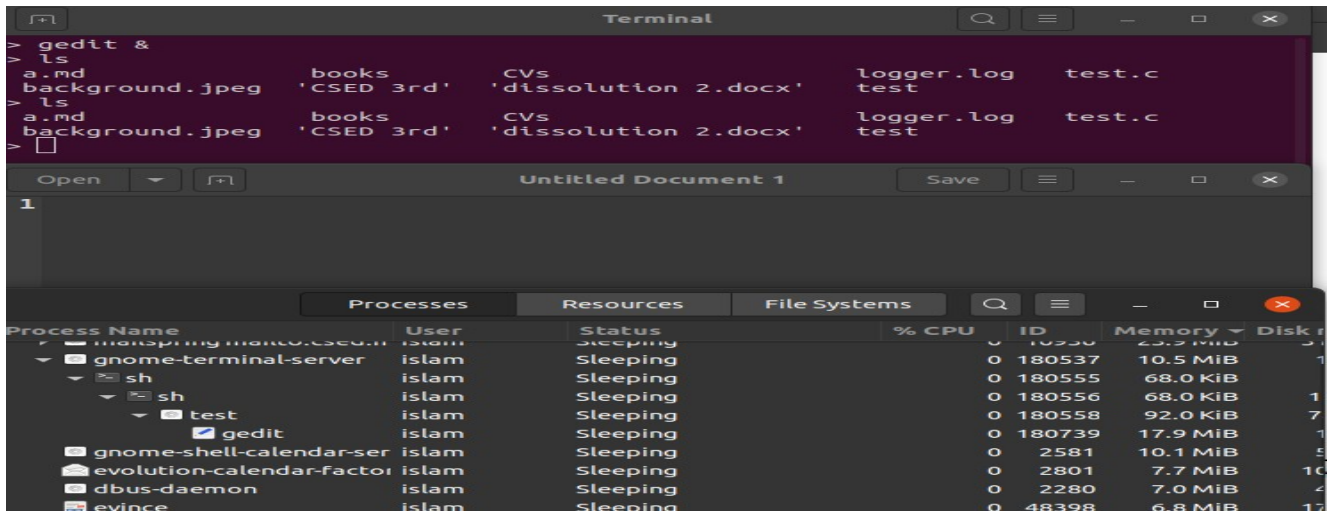
Simple Runs:

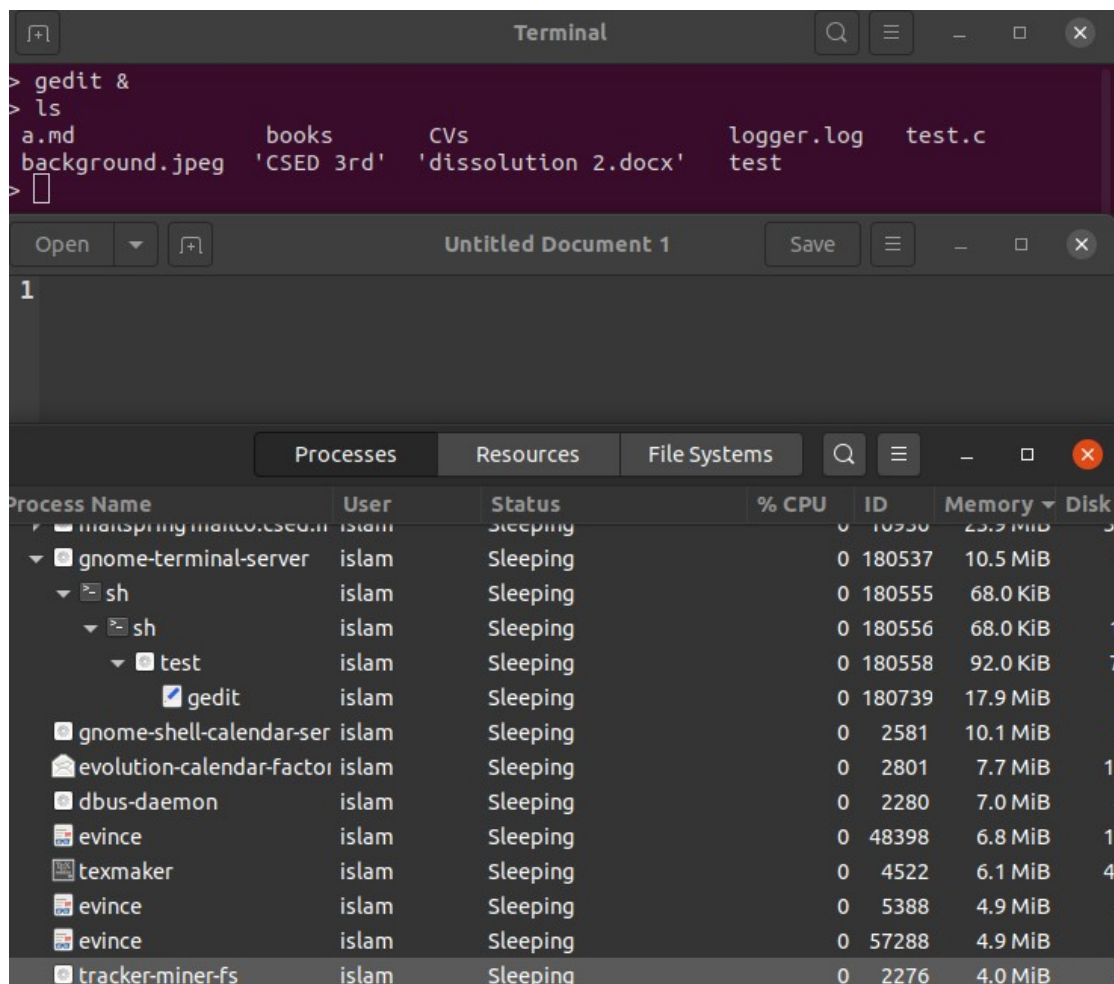


```
Terminal
> ls
a.md          books        CVs          logger.log   test.c
background.jpeg 'CSED 3rd' 'dissolution 2.docx' test
```



```
Terminal
> ls
a.md          books        CVs          logger.log   test.c
background.jpeg 'CSED 3rd' 'dissolution 2.docx' test
> pwd
/home/islam/Desktop
> dir
a.md          books        CVs          logger.log   test.c
background.jpeg CSED\ 3rd  dissolution\ 2.docx test
> dar
syntax error!
>
```





resources:

<https://stackoverflow.com/questions/28457525/how-do-you-kill-zombie-process-using-wait>