

Lab 03: C programming in Linux by using GCC

A. Learning Outcome

- C Programming, compile, and run in Linux
- How C programs are executed
- Some basic coding principles

B. Lab Description

- Read about GCC to have the general knowledge about using it.
- Write a C program that displays the following menu and prompts for one-character input to invoke a menu option, as shown.
 - Display the present working directory
 - Show RAM size and usage.
 - List names of the files in a given directory
 - Display whether a given typed file is an ordinary file or a directory. If that is a file, then display the content of it.
 - Display today's date and time in Vietnamese
 - Exit the program

C. Your code should have the following structure:

- **Lab3.c**: Contains menu and the general flow of the main program
- **Func.h**: Includes all the header of functions which are used; require that each choice in menu has itself functions.
- **Func.c**: Implements detail the function which are declared in *Func.h*
- **Lab3run**: After compile, we have executable file that is *Lab3run*

Hint: You can use `system(const char *)` to call the command of system. In order to use that command, you must include `stdlib.h` library in your code.

D. Submission

Create the directory with a name like <class>-<name><roll number>-Lab-03, e.g.

SE1801-QuangTV-HE183456-Lab03

Copy all your source code and run files to those folder.

Compress the folder to .zip file (with the same name) and upload to CMS.

At the beginning of your program, include comments reflecting accurate information for you in the format as below:

```
/*  
Lab 04 - C Programming in Linux  
Class ID : SE1801  
Student ID : HE183456  
Student Name : Nguyễn Minh Đức  
Due Date : 12 April 2024  
I declare that this assignment is my own work  
in accordance with FPT Policy.  
*/
```

E. TEST CASES for LAB 03

Please choose from the following options; type the option number and hit the <Enter> key.

- a or A To display the current directory
- b or B To list names of the files in a given directory
- c or C To display today's date and time
- e or E Display today's date and time in Vietnamese
- f or F To exit the program.

Enter your choice and hit <Enter>: a

/home/nghia/Test/Shell

Hit <Enter> to continue.

Enter your choice and hit <Enter>: b

Please enter the directory path: /sys

total 4

drwxr-xr-x 12 root root 0 2009-07-18 13:18 .

drwxr-xr-x 21 root root 4096 2009-06-26 16:07 ..

drwxr-xr-x 2 root root 0 2009-07-18 13:18 block

drwxr-xr-x 21 root root 0 2009-07-18 13:18 bus

drwxr-xr-x 46 root root 0 2009-07-18 13:18 class

drwxr-xr-x 4 root root 0 2009-07-18 21:13 dev

drwxr-xr-x 10 root root 0 2009-07-18 13:18 devices

drwxr-xr-x 4 root root 0 2009-07-18 13:18 firmware

drwxr-xr-x 4 root root 0 2009-07-18 13:18 fs

drwxr-xr-x 6 root root 0 2009-07-18 13:18 kernel

drwxr-xr-x 97 root root 0 2009-07-18 13:18 module

drwxr-xr-x 2 root root 0 2009-07-18 13:18 power

Hit <Enter> to continue.

Enter your choice and hit <Enter>: b

Please enter the directory path: adirectory

adirectory is not a directory.

Hit <Enter> to continue.

Enter your choice and hit <Enter>: c

	total	used	free	shared	buffers	cached
Mem:	1026028	849860	176168	0	67480	474336

-/+ buffers/cache:		308044	717984			
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Swap:	1046524	0	1046524			
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Hit <Enter> to continue.

Enter your choice and hit <Enter>: d
Please enter file name: afile
afile does not exist, or it is neither an ordinary file not a
directory.
Hit <Enter> to continue.

Enter your choice and hit <Enter>: d
Please enter file name: case_demo
case_demo is an ordinary file, with content:
aaaaaa
hello world of SE...
Hit <Enter> to continue.

Enter your choice and hit <Enter>: d
Please enter file name: dir1
dir1 is a directory.
Hit <Enter> to continue.

Enter your choice and hit <Enter>: e
Hom nay la thu Bay ngay 18 thang 7 nam 2009
Thoi gian hien tai la 21h:15m:17s
Hit <Enter> to continue.

Enter your choice and hit <Enter>: f
Bye now!