
Program Design (1)

— Command Line Interface —

Outline


- What is CLI and GUI.
- Basic Commands.
- Vim
- GCC
- Hello World in CLI

What is GUI and CLI ?

GUI stands for Graphical User Interface, you should already be familiar with it.

CLI stands for Command Line Interface, which is another way to interact with your computer. People use CLI interface to operate computer by entering "commands" in the terminal.

- harder to use.
- have more control to your computer.

A terminal window with a dark purple background and a white cursor. The prompt 'arun@arun:~/tty\$' is visible at the top left.

```
arun@arun:~/tty$
```

File Operations via CLI

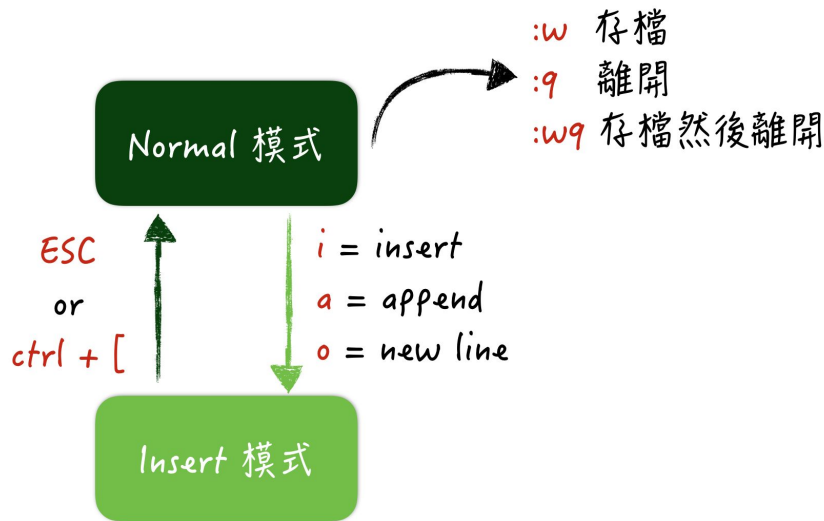
think your computer as series of directory and file. ([link](#))

- ls : list directory contents.
- cd : change directory.
- man : manual of command.
- mkdir : create a empty directory.
- touch : create or modify a file.
- cat : output file in text format
- rm : remove files or directories.
- pwd : output the current working directory.
- clear: clear the terminal screen.

Vim

vim is a text editor (like Windows Notepad in CLI), you can edit file with it through the command line interface.

- open it by enter 'vim' in terminal
- switch mode to edit file in vim



GCC

Computer does not understand C program.

- computer only understand the binary format. (e.g. .exe in Windows)
- program is written in C Grammar (with English keywords).

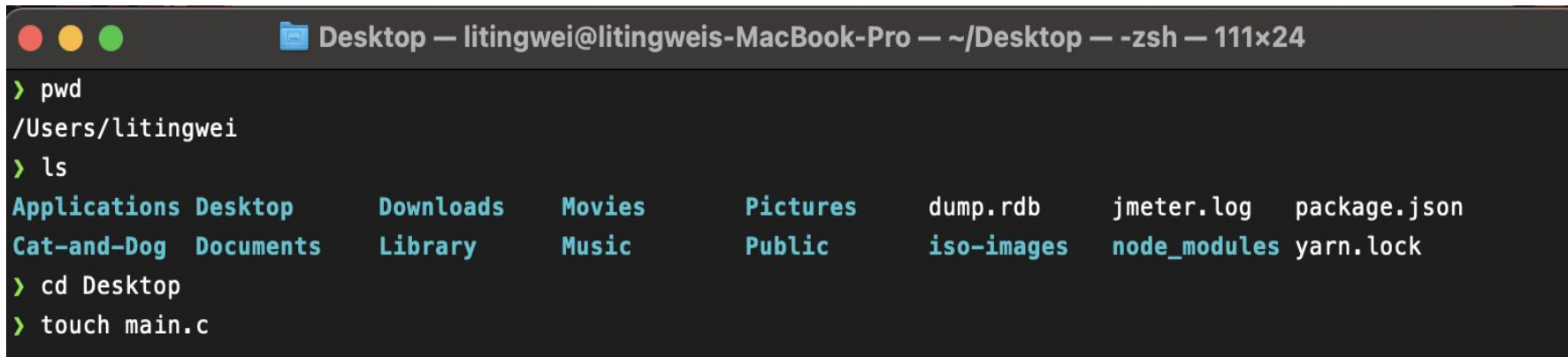
So we need a tool that helps us to translate C program into binary format.

gcc is an open source compiler developed in 1985, and has been used widely since then. It is a great tool that helps us to compile a C program into an executable file.

Hello World in CLI

Change to the directory that you want to put your file. For example, I put mine in the “Desktop” directory.

- `cd Desktop`
- `touch main.c`

A terminal window titled "Desktop — litingwei@litingweis-MacBook-Pro — ~/Desktop — -zsh — 111x24". The window shows the following commands and output:

```
> pwd
/Users/litingwei
> ls
Applications Desktop Downloads Movies Pictures dump.rdb jmeter.log package.json
Cat-and-Dog Documents Library Music Public iso-images node_modules yarn.lock
> cd Desktop
> touch main.c
```

Hello World in CLI

Say hello to the world with vim.

- vim main.c
- enter "i" to switch to insert mode.
- write the program !!!
- press "esc" to return to normal mode.
- enter "w" to save the file.
- enter "q" to exit vim
- use "gcc" to compile your program
- run the executable file.

Reference

How to open Terminal in Windows

- <https://www.digitalcitizen.life/open-cmd/>

install Vim and GCC in Windows

- vim: <https://www.youtube.com/watch?v=E5ss6biMoWQ>
- gcc : https://www.youtube.com/watch?v=2jpLG_XBVWI

Windows Command to Linux Command:

- http://ftp.kh.edu.tw/Linux/Redhat/en_6.2/doc/gsg/ch-doslinux.htm

Read More :

- 鳥哥: https://linux.vbird.org/linux_basic/centos7/0310vi.php
- 高見龍: <https://gitbook.tw/chapters/command-line/vim-introduction>