# Operating System Project 2

## Project goal:

基於 project1 已經學到的 kernel module 建立方法，利用 library 中已經定義好的巨集將系統中的 task 以下列兩種方式列出來:

1. Linearly
2. Depth-first search tree (DFS)

## Requirement:

- 使用 Makefile 來編譯 kernel module (10%)

- 能夠成功安裝 kernel module: **insmod** (5%)

- 能夠成功移除 kernel module: **rmmod** (5%)

- Iterating over tasks linearly (40%)
- Iterating over tasks with depth-first search tree (40%)

## Hint:

1. 可參考課本第 156 頁
2. struct task_struct
3. Macros
   a. list_for_each
   b. list_entry
   c. for_each_process
4. linux/sched.h

# Example:

## Project tree:

project2/
    Makefile
    your_module.c

## Commands:

```
$ cd project2
$ make clean && make
$ sudo dmesg -c
$ sudo insmod your_module.ko
$ dmesg
[2084753.657240] Loading Module
[2084753.657242] LINEAR:
…list of tasks
[2084753.657350] DFS:
...list of tasks
$ sudo rmmod your_module
$ dmesg
[2084753.657240] Loading Module
[2084753.657242] LINEAR:
...
[2084930.870021] Removing Module
```