Operating Systems
HCMC International University

Course: IT077IU
Time: 120 minutes

Laboratory Session 1

This session aims at revising Linux commands and C/C++ programming. The focus is on using commands to learn about the Ubuntu operating system and writing C/C++ programs to do some particular tasks.

Problem 1.1: *Shell commands on Linux* (0 points)

Read The Linux command line for beginners to recall the Linux background. Using the *man* command to explore a set of shell commands that focus on the following issues:

- Hit Ctril + Alt + T to open a terminal where students try commands
- Files and directories: *mkdir*, *ls*, *mv*, *rm*, *cp*, *find*, *chmod*, ...
- Editors: *vi*, *emacs*, *gedit*, *notepad*, ... Students can use **gedit** to write C/C++ code.
- System information: *uname*, *vmstat*, *netstat*, *df*, *du*, *ps*, *top*, *env*, ...

Problem 1.2: *Fibonacci program* (10 points)

Write a C/C++ program that accepts N positive integral numbers from the command line and verifies whether those numbers are members of the Fibonacci chain. At the end, the program prints out each number with the answer. An execution of the program on the command line might look like this:

```
$ fibo 3 4 12 19
3 is a Fibonacci member
4 is not a Fibonacci member
13 is a Fibonacci member
19 is not a Fibonacci member
```

The programs must handle error situations (including wrong input) in a meaningful way. Make sure the program compiles cleanly with gcc -O2 -Wall -lm.

The solution (only one .c file) is formatted in *name_id_l1.c* and submitted to the Blackboard system by the end of the lab class. Note that students are responsible for missing/duplicated files due to wrong formats. Copying the whole source code from various sources such as the Internet is disallowed.