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: *Growing program* (10 points)

Write a C/C++ program that accepts N positive integral numbers from the command line and verifies whether those numbers are growing numbers. A growing number contains digits (from left to right) arranging in an increasing order, e.g., 1245, 258, ... 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:

```
$ grow 1 23 144 3689
1 is not a growing number
23 is a growing number
144 is not a growing number
3689 is a growing number
```

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.