Prelab 1. Basic Linux Commands (Due date: 4:00pm March 13, 2020)

- The TLCL book is publicly available at: http://sourceforge.net/projects/linuxcommand/
- Submit a prelab report with your answers (in PDF)
- HGU CSEE Standard on assignments:
  - Submitting assignments or program codes written by others or acquired from the internet without explicit approval of the professor is regarded as cheating.
  - Showing or lending one's own homework to other student is also considered cheating that disturbs fair evaluation and hinders the academic achievement of the other student.
  - It is regarded as cheating if two or more students conduct their homework together and submit it individually when the homework is not a group assignment.
- Prelab report should be your individual work (a prelab report is not a team assignment). It aims to promote every student to read the textbook as the course is moving forward.

1. Read Introduction of TLCL (pages xvi-xx) and answer the following questions.

a) What does "Linux" refer to in popular usage?

In popular usage, "Linux" refers to the kernel and all the other free and open source software found in the typical Linux distribution, that is, the entire Linux ecosystem, not just the GNU components,

2. Read Chapters 1-3 of TLCL (pages 1-24) carefully and exercise all commands in the textbook thoroughly on your local VM. Write an answer to each of the following questions and explain how you find your answer.

a) Let us assume that your shell prompt displays as:

```
foo@bar ~/Downloads $
```

What kinds of information you can figure out from it?

Information about username, machine name, and current working directory.
The username is foo, machine name is bar, and current working directory is ~/Downloads.
And we could know that (through displaying of shell prompt) the shell is ready to accept input.

b) **What are the two different methods to end a terminal session?**

By either entering the exit command at the shell prompt or pressing ctrl + d.

c) In order to list all files, including hidden files, in your current directory, how would you write a command?

ls -a
(You could also put "**.**" (dot) at the end of the command "ls -a", like "ls -a .".)

d) **What does 'less is more' mean in the Linux community?**

As the "less" program was designed as an improved replacement of an earlier Unix program called "more", "less" command in Linux can do more than "more" command. "less" falls into the class of programs called "pagers," programs that allow the easy viewing of long text documents in a page-by-page manner. Whereas the "more" program could only page forward, the "less" program allows paging both forward and backward and has many other features as well.
For summary, "less" command can do more thing than "more" command. So less is more.

e) **Describe what the following directories are for.**

- `/usr:` It contains all the programs and support files used by regular users.

  "Unix Software Resource"의 약자인 "usr"은 일반 사용자와 시스템 관리자 모두에게 필요한 응용 프로그램, 라이브러리, 문서, 설정 파일 등이 포함되어 있습니다.

- `/var:` This directory contains data that is likely to change; various databases, spool files, user mail, etc. are located here.

  /var 디렉토리는 변수(variable)라는 단어에서 유래된 Unix 시스템에서 사용되는 경로 중 하나입니다.
  시스템에서 자주 변경되는 데이터를 저장하기 위해 사용됩니다. 주로 로그 파일, 캐시, 프로세스와 관련된 파일, 데이터베이스 파일 등의 시스템 데이터가 저장됩니다.

- `/dev:` This is a special directory that contains device nodes. Here is where the kernel maintains a list of all the devices it understands.

  /dev는 Unix 및 Linux 운영 체제에서 사용되는 디렉토리 중 하나입니다. 이 디렉토리는 디바이스(device) 파일들이 저장되는 위치입니다.
  즉, 이 디렉토리에는 시스템에서 사용되는 하드웨어 및 소프트웨어 장치를 나타내는 특수 파일들이 포함됩니다.

- `/boot:` Contains the Linux kernel, initial RAM dis image (for drivers needed at boot time), and the boot loader.

  /boot는 대부분의 Linux 시스템에서 부트 로더(bootloader)와 커널(kernel) 이미지가 저장되는 디렉토리입니다.

- `/lib:` Contains shared library files used by the core system programs. These are similar to dynamic link libraries (DLLs) in Windows.

- `/etc:` Contains all of the system-wide configuration files. It also contains a collection of shell scripts that start each of the system services at boot time.

  /etc 디렉토리는 Linux 시스템에서 설정 파일들이 저장되는 디렉토리입니다. 비밀번호, DNS 서버의 주소, 호스트 이름과 IP 주소 매핑하는 파일 이러한 전반적인 설정파일들이 저장

/lib 디렉토리는 Linux 시스템에서 공유 라이브러리(shared library)가 저장되는 디렉토리입니다. = 자주 사용하는 라이브러리도 여기에 포함 C library 함수들
공유 라이브러리는 프로그램이 실행될 때 사용되는 코드와 데이터를 포함하는 파일입니다.
라이브러리는 여러 프로그램에서 공유될 수 있으며, 메모리 사용량을 줄이고 실행 속도를 높이는 등의 이점을 제공합니다.