# Practical Lab 1

**Lesson Outcome:**

- Know basic Linux commands

- Know Jetpack programs

## A. Mandatory [7%]

Tasks: Understand the purpose for each command. Capture screenshots that include

* Your student’s name for the prompt
* Output

Example:

Text

Description automatically generated

### 1. Basic

* Command autocompletion
* Press <TAB> after the command to auto fill, as long as there is no ambiguity of the files in the current directory.

**Check current working directory**

pwd

**List files in a directory ~**

* ~ is the user home folder.

ls <DIR\_NAME>

**Read file content** examples.desktop

cat <FILE\_NAME>

**Get shell profile**

cat ~/.bashrc

**Check history of commands**

history

**Read top 5 lines in a file**

head -n <LINE\_NUM>

**Read last 5 lines in a file**

less -n <LINE\_NUM>

**Continuously follow text changes in /var/log/syslog**

tail -f <FILE\_PATH>

**Find files matching pattern \*tensor\***

find / -name <PATTERN>

**Check system environment**

printenv

**Find out the path for the program wget**

which <PROGRAM\_NAME>

**Print a Global variable JETSON\_BOARD**

echo $<VARIABLE\_NAME>

**Print the global $PATH variable where the OS will search for the program**

echo $PATH

**Create a file foo.txt but not writing any content**

touch <FILE\_NAME>

* Useful if you just want to create a lock file.

**Print directory tree from /bin**

tree <DIR\_NAME>

* Type apt install tree in case command is not found

**Get system services status of sshd**

systemctl status <SERVICE\_NAME>

**Follow and read log files from a system unit sshd**

journalctl -f -u <SERVICE\_NAME>

### 2. Commonly Used Programs [For reference only]

Edit file (text editor)

nano foo.txt

**File Downloader**

Download files

wget https://raw.githubusercontent.com/mantisbt-plugins/source-integration/master/LICENSE

**HTTP Client**

Send HTTP GET Request

curl https://www.google.com

**Terminal multiplexer**

Create new session name lab1

tmux new -s <SESSION\_NAME>

List all sessions

tmux ls

Go to a session lab1

tmux a -t <SESSION\_NAME>

Get specific column

ls / -alh | awk '{print $1}'

### 3. System Stats

Show CPU info

cat /proc/cpuinfo

### 4. Monitoring

Show workload

htop

* Type apt install htop in case command is not found

### 5. File System

List block devices

lsblk

List partitions

fdisk -l

Check file info for ~/examples.desktop

file <FILE\_NAME>

### 6.Networking

Show all interfaces

ip address

Show all listening interface on port 22

netstat -nap | grep 22

### 7. Package Management

Update package repository list

apt-get update

Install package build-essential

apt install <PACKAGE\_NAME>

Remove package build-essential without removing all dependencies from that package)

apt purge <PACKAGE\_NAME>

Upgrade package build-essential

apt upgrade <PACKAGE\_NAME>

Search for package name nvidia in repo

apt-cache search <PACKAGE\_NAME>

### 8. Jetpack related

Check current active power mode

nvpmodel -q

Change power mode to 2 (persist after reboot)

nvpmodel -m 2

Check CPU/GPU memory utilizations

Tegrastats

## B. Comprehensive [3%]

Q1) What is a shell? What is its purpose?

Q2) What are the three standard streams in Linux?

Q3) What is the difference between redirection and pipe? Show an example.

Q4) What is the tool used to resume a shell session when the network is interrupted?