

# **LAPORAN PRAKTIKUM II**

## **SISTEM OPERASI**

Dosen Pengampu :  
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**FAKULTAS TEKNOLOGI INFORMASI**  
**UNIVERSITAS ISLAM BALITAR**  
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## BAB 2

### Perintah Dasar Linux

#### 1. LINUX

##### 1.1. Tujuan Pembelajaran

- 1) Mengenalkan system operasi GNU/Linux
- 2) Memahami perintah-perintah dasar GNU/Linux
- 3) Mampu mengoperasikan GNU/Linux pada model terminal

##### 1.2. Dasar Teori

GNU/Linux adalah sistem operasi berbasis kernel Linux yang menggabungkan berbagai komponen perangkat lunak, termasuk utilitas GNU, untuk menyediakan lingkungan kerja yang lengkap. Salah satu fitur utama dari sistem operasi ini adalah penggunaan Command Line Interface (CLI), yang memungkinkan pengguna untuk berinteraksi langsung dengan sistem melalui perintah teks. Berikut adalah dasar teori terkait GNU/Linux pada command line:

##### 1. Struktur Dasar GNU/Linux

GNU/Linux dirancang sebagai sistem operasi berbasis Unix, yang terdiri dari beberapa komponen utama:

- Kernel Linux: Inti sistem operasi yang mengelola perangkat keras dan sumber daya sistem.
- Shell: Antarmuka pengguna berbasis teks yang memungkinkan eksekusi perintah. Contohnya adalah Bash, Zsh, dan Fish.
- File System: Sistem berkas hierarkis dengan struktur berbasis pohon, di mana direktori root (/) menjadi akar dari semua direktori lainnya.

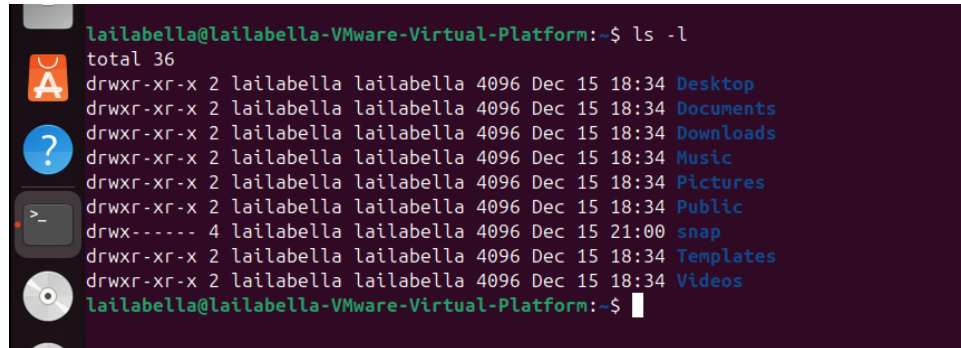
##### 2. Command Line Interface (CLI)

CLI adalah antarmuka berbasis teks yang digunakan untuk menjalankan perintah, melakukan konfigurasi, dan mengelola sistem.

Keunggulan CLI dalam GNU/Linux:

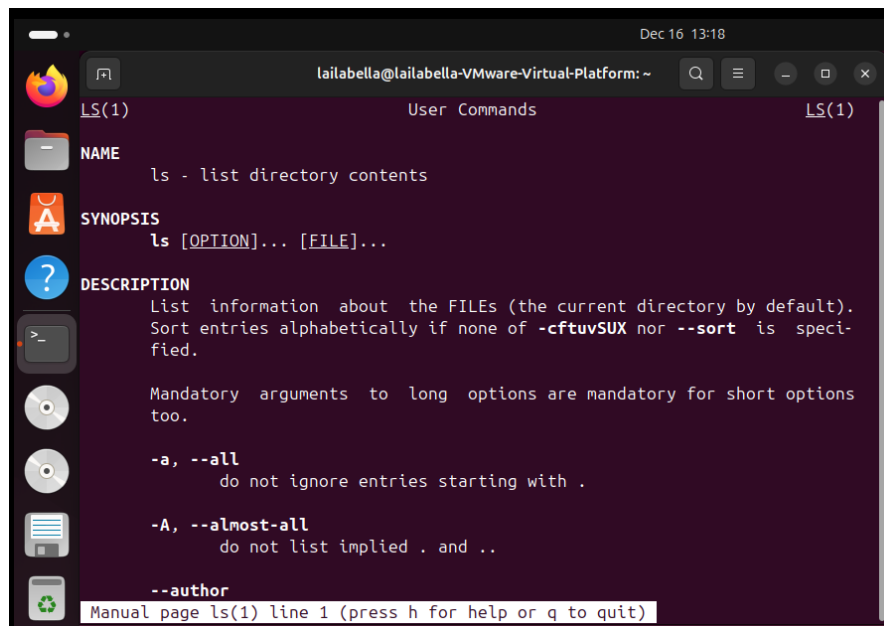
- Kendali Efisiensi: Perintah dapat dijalankan dengan cepat dibandingkan antarmuka grafis.
- Lebih Lanjut: CLI memberikan akses mendalam ke konfigurasi sistem.
- Otomasi: Dukungan scripting mempermudah tugas berulang.

Contoh cara menampilkan konten dari sebuah direktori aktif, dengan opsi “ls-l” (*use a long listing format*)



```
lailabella@lailabella-VMware-Virtual-Platform:~$ ls -l
total 36
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Desktop
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Documents
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Downloads
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Music
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Pictures
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Public
drwx----- 4 lailabella lailabella 4096 Dec 15 21:00 snap
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Templates
drwxr-xr-x 2 lailabella lailabella 4096 Dec 15 18:34 Videos
lailabella@lailabella-VMware-Virtual-Platform:~$
```

Kemudian untuk keluar dari informasi yang ditambihkan kita dapat tekan **Q (Quit)** di keyboard sebagai contoh tampilanya seperti gambar berikut.



```
Dec 16 13:18
lailabella@lailabella-VMware-Virtual-Platform:~
LS(1) User Commands LS(1)
NAME
ls - list directory contents
SYNOPSIS
ls [OPTION]... [FILE]...
DESCRIPTION
List information about the FILES (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is speci-
fied.
Mandatory arguments to long options are mandatory for short options
too.
-a, --all
do not ignore entries starting with .
-A, --almost-all
do not list implied . and ..
--author
Manual page ls(1) line 1 (press h for help or q to quit)
```

### 1.3. Syntax Perintah Linux

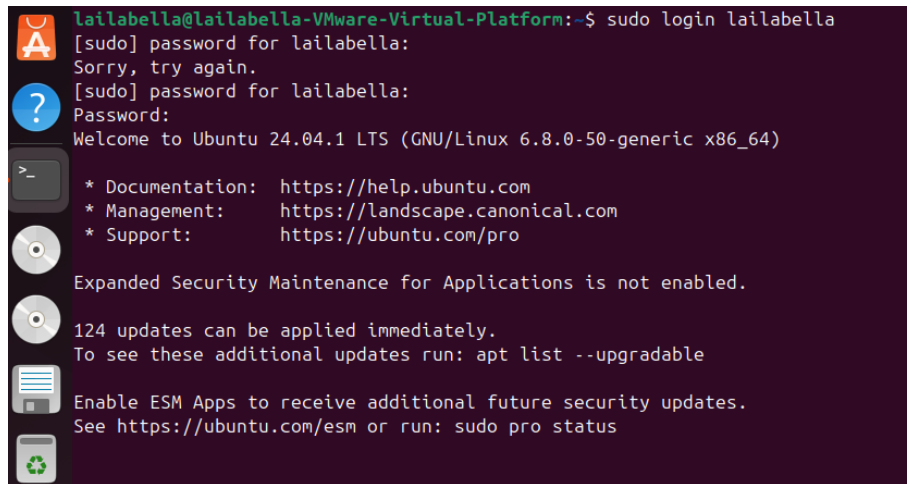
Sintaks perintah Linux adalah struktur atau aturan penulisan perintah yang digunakan dalam Command Line Interface (CLI) untuk menjalankan tugas tertentu pada sistem

operasi Linux. Sintaks ini menentukan bagaimana sebuah perintah harus ditulis, termasuk elemen-elemen seperti nama perintah, opsi, argumen, dan parameter tambahan.

#### 1.4. Login

Perintah memasukkan system kedalam linux, kita harus melakukan proses login terlebih dahulu dengan cara memasukkan nama user dan password.

Contoh :



```
lailabella@lailabella-VMware-Virtual-Platform:~$ sudo login lailabella
[sudo] password for lailabella:
Sorry, try again.
[sudo] password for lailabella:
Password:
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-50-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

Expanded Security Maintenance for Applications is not enabled.

124 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
```

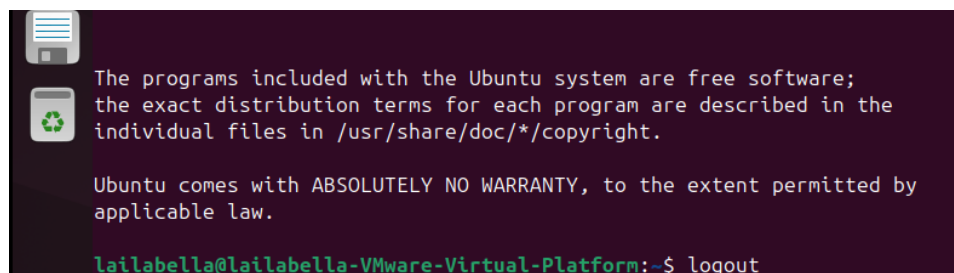
Keterangan :

- Masukkan **USERNAME**
- Masukkan **PASSWORD**

#### 1.5. Logout

Unruk Keluar dari user yang sedang lohgin, kita dapat mengetikkan perintah logout.

Contoh :



```
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

lailabella@lailabella-VMware-Virtual-Platform:~$ logout
```

## 1.6. Melihat Posisi Virtual Terminal

Dengan perintah ***tty*** kita dapat mengetahui posisi virtual terminal, yang kemudian menampilkan ***dev/pts/0 (pseudo-terminal)***

```
lailabella@lailabella-VMware-Virtual-Platform:~$ tty
/dev/pts/0
lailabella@lailabella-VMware-Virtual-Platform:~$
```

## 1.7. Info

Perintah tersebut digunakan untuk membaca dokumentasi dari format perintah yang diinginkan.

Contoh :

```
10.1 'ls': List directory contents
=====
The 'ls' program lists information about files (of any type, including
directories). Options and file arguments can be intermixed arbitrarily,
as usual. Later options override earlier options that are incompatible.

For non-option command-line arguments that are directories, by
default 'ls' lists the contents of directories, not recursively, and
omitting files with names beginning with '.'. For other non-option
arguments, by default 'ls' lists just the file name. If no non-option
argument is specified, 'ls' operates on the current directory, acting as
if it had been invoked with a single argument of '.'.

By default, the output is sorted alphabetically, according to the
locale settings in effect.(1) If standard output is a terminal, the
output is in columns (sorted vertically) and control characters are
output as question marks; otherwise, the output is listed one per line
and control characters are output as-is.

Because 'ls' is such a fundamental program, it has accumulated many
options over the years. They are described in the subsections below;
within each section, options are listed alphabetically (ignoring case).
The division of options into the subsections is not absolute, since some
options affect more than one aspect of 'ls''s operation.

Exit status:

-----Info: (coreutils)ls invocation, 56 lines --Top-----
Welcome to Info version 7.1. Type H for help, h for tutorial.
```

## 1.8. Whatis

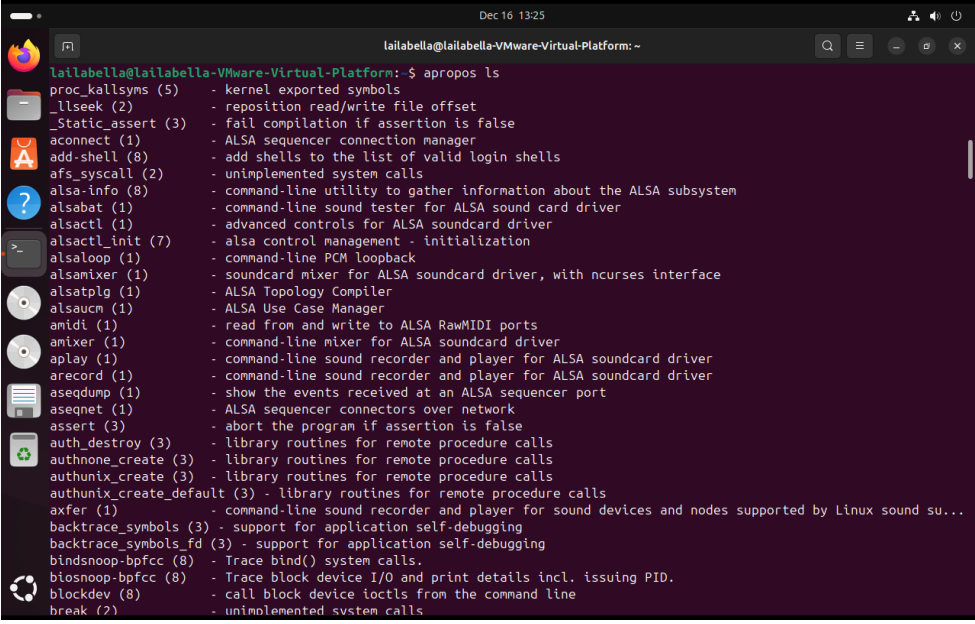
Digunakan sebagai cara mendapatkan informasi perintah secara singkat dengan format ***whatis ls***. Selain itu ***makewhatis*** digunakan untuk mengaktifkan database yang digunakan oleh ***whatis***.

Contoh :

```
lailabella@lailabella-VMware-Virtual-Platform:~$ whatis ls
ls (1) - list directory contents
lailabella@lailabella-VMware-Virtual-Platform:~$
```

### 1.9. Apropos

Sebagai pencari informasi secara massal. Perintah ini berguna untuk mengetahui sebagian dari perintah jika tidak tahu persis perintah yang dimaksud atau mengetahui sebagai dari keyword perintah.



```
lailabella@lailabella-VMware-Virtual-Platform: ~  
$ apropos ls  
proc_kallsyms (5) - kernel exported symbols  
_llseek (2) - reposition read/write file offset  
_Static_assert (3) - fail compilation if assertion is false  
aconnect (1) - ALSA sequencer connection manager  
add-shell (8) - add shells to the list of valid login shells  
afs_syscall (2) - unimplemented system calls  
alsa-info (8) - command-line utility to gather information about the ALSA subsystem  
alsabat (1) - command-line sound tester for ALSA sound card driver  
alsactl (1) - advanced controls for ALSA soundcard driver  
alsactl_init (7) - alsa control management - initialization  
alsaloop (1) - command-line PCM loopback  
alsamixer (1) - soundcard mixer for ALSA soundcard driver, with ncurses interface  
alsatplg (1) - ALSA Topology Compiler  
alsaucm (1) - ALSA Use Case Manager  
amidi (1) - read from and write to ALSA RawMIDI ports  
amixer (1) - command-line mixer for ALSA soundcard driver  
aplay (1) - command-line sound recorder and player for ALSA soundcard driver  
arecord (1) - command-line sound recorder and player for ALSA soundcard driver  
aseqdump (1) - show the events received at an ALSA sequencer port  
aseqnet (1) - ALSA sequencer connectors over network  
assert (3) - abort the program if assertion is false  
auth_destroy (3) - library routines for remote procedure calls  
authnone_create (3) - library routines for remote procedure calls  
authunix_create (3) - library routines for remote procedure calls  
authunix_create_default (3) - library routines for remote procedure calls  
axfer (1) - command-line sound recorder and player for sound devices and nodes supported by Linux sound su...  
backtrace_symbols (3) - support for application self-debugging  
backtrace_symbols_fd (3) - support for application self-debugging  
bindsnop-bpfcc (8) - Trace bind() system calls.  
biosnoop-bpfcc (8) - Trace block device I/O and print details incl. issuing PID.  
blockdev (8) - call block device ioctls from the command line  
break (2) - unimplemented system calls
```

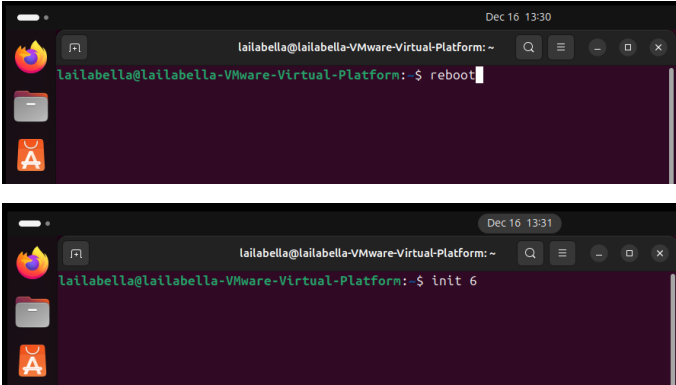
### 1.10. Informasi Sistem

Menampilkan informasi system. System yang dimaksud adalah versi kernel yang digunakan. Dengan perintah **uname**.

### 1.11. Merestart Sistem

Untuk merestart system kita dapat mengetikkan **reboot** dan **init 6**.

Contoh :

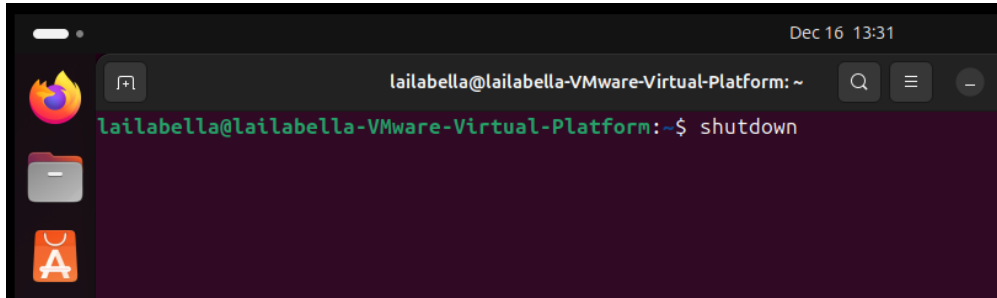


```
lailabella@lailabella-VMware-Virtual-Platform: ~  
$ reboot  
  
lailabella@lailabella-VMware-Virtual-Platform: ~  
$ init 6
```

### 1.12. Mematikan Sistem

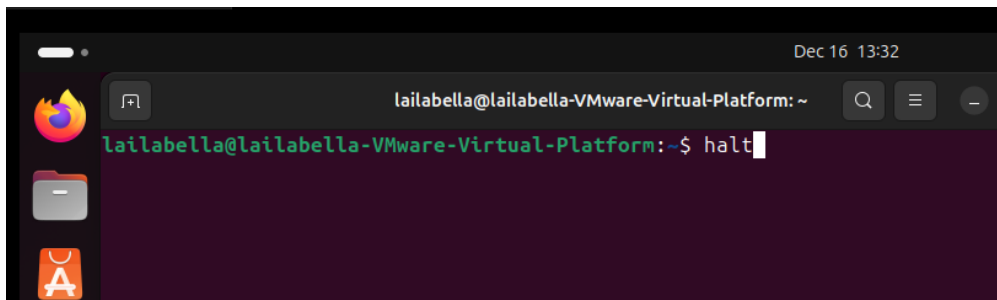
Untuk mematikan system kita dapat melakukan perintah *Shutdown*, *halt*, *init 0*, *poweroff*.

Contoh :



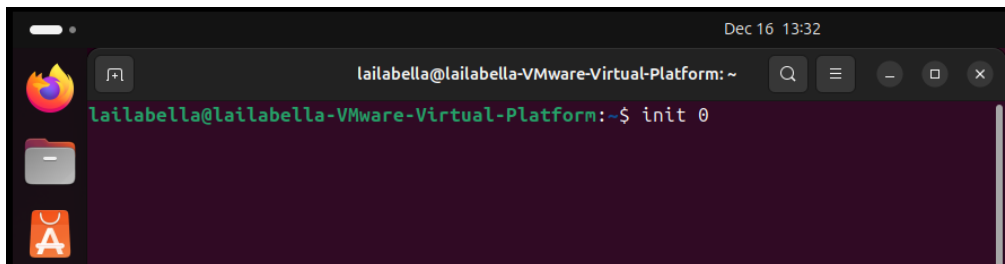
A terminal window titled "lailabella@lailabella-VMware-Virtual-Platform: ~" with a search bar and window controls. The prompt is "lailabella@lailabella-VMware-Virtual-Platform:~\$". The command "shutdown" has been entered and is highlighted in green.

```
lailabella@lailabella-VMware-Virtual-Platform:~$ shutdown
```



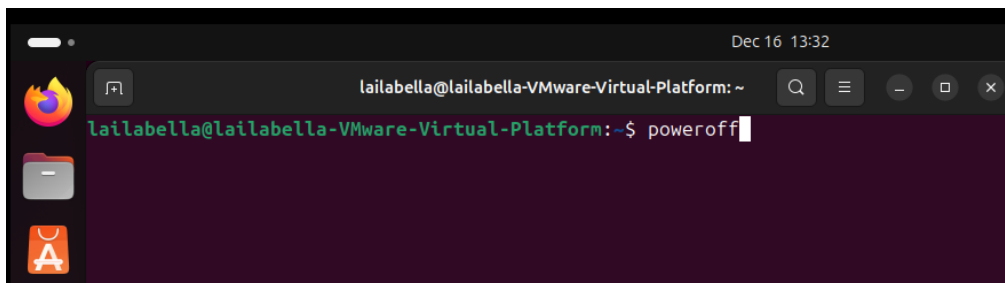
A terminal window titled "lailabella@lailabella-VMware-Virtual-Platform: ~" with a search bar and window controls. The prompt is "lailabella@lailabella-VMware-Virtual-Platform:~\$". The command "halt" has been entered and is highlighted in green.

```
lailabella@lailabella-VMware-Virtual-Platform:~$ halt
```



A terminal window titled "lailabella@lailabella-VMware-Virtual-Platform: ~" with a search bar and window controls. The prompt is "lailabella@lailabella-VMware-Virtual-Platform:~\$". The command "init 0" has been entered and is highlighted in green.

```
lailabella@lailabella-VMware-Virtual-Platform:~$ init 0
```



A terminal window titled "lailabella@lailabella-VMware-Virtual-Platform: ~" with a search bar and window controls. The prompt is "lailabella@lailabella-VMware-Virtual-Platform:~\$". The command "poweroff" has been entered and is highlighted in green.

```
lailabella@lailabella-VMware-Virtual-Platform:~$ poweroff
```