LAPORAN PROGRESS 1(MIINGGU 12)

Pengecekan Phyton dan Instalasi Library Monitoring

PROJECT 3

1. **Tujuan**

   Tujuan dari progress 1 untuk memastikan bahwa bahasa pemrograman phyton sudah tersedia pada sistem Linux virtual yang kami gunakan, serta melakukan instalasi library pendukung yang dibutuhkan untuk pembuatan aplikasi *Monitoring Resource System* yaitu `psutil, matplotlib, pip3,` dan `python3-tk.`

2. **Alat dan Bahan**

Alat/Bahan	Keterangan
Laptop	Perangkat Utama
Oracle VirtualBox	Media Virtualisasi
Linux	Sistem Operasi
Phyton3	Bahasa Pemrograman
Pip3	Package manager
Library psutil	Monitoring Resource
Library matplotlib	Visualisasi data
Terminal Linux	Media eksekusi perintah
Python3-tk	GUI matplotlib
nano	Text editor

3. **Langkah-langkah Pelaksanaan**

 3.1 Membuat Folder Project

   Buat direktori khusus untuk project yang akan dibuat, stelah itu masuk ke folder project yang kita buat

```
vboxuser@lab-linux01:~$ mkdir ~/Documents/SO_PROJECT
vboxuser@lab-linux01:~$ cd ~/Documents/SO_PROJECT
```

3.2 membuat File Program

   Selanjutnya dibuat file program utama menggunakan text editor nano.

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ nano linux_task_manager.py
```

3.3 Update Sistem Linux

Untuk memastikan sistem dalam kondisi terbaru, dilakukan update dan upgrade dengan perintah tersebut.

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ sudo apt update
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:2 http://id.archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://id.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://id.archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,34
9 kB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [221
kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21
.6 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata
 [9,448 B]
Get:9 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages
 [2,205 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-e
n [503 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Compone
```

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ sudo apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  libllvm20
The following packages will be upgraded:
  bluez bluez-cups bluez-obexd cloud-init coreutils cups cups-bsd cups-client
  cups-common cups-core-drivers cups-daemon cups-ipp-utils cups-ppdc
  cups-server-common dconf-cli dconf-gsettings-backend dconf-service
  distro-info-data firmware-sof-signed fwupd gdm3 gir1.2-gdm-1.0
  gir1.2-gtk-4.0 gir1.2-nm-1.0 gnome-shell-extension-desktop-icons-ng
```

3.4 Instalasi Library `psutil` dan `matplotlib`

Library pertama untuk monitoring sistem dan visualisasi grafik diinstal menggunakan perintah `pip3 install psutil matplotlib --break-system-packages`

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ pip3 install psutil matplotlib --br
eak-system-packages
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: psutil in /home/vboxuser/.local/lib/python3.12/si
te-packages (7.1.3)
Requirement already satisfied: matplotlib in /home/vboxuser/.local/lib/python3.1
2/site-packages (3.10.7)
Requirement already satisfied: contourpy>=1.0.1 in /home/vboxuser/.local/lib/pyt
hon3.12/site-packages (from matplotlib) (1.3.3)
Requirement already satisfied: cycler>=0.10 in /home/vboxuser/.local/lib/python3
.12/site-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /home/vboxuser/.local/lib/py
thon3.12/site-packages (from matplotlib) (4.61.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /home/vboxuser/.local/lib/py
thon3.12/site-packages (from matplotlib) (1.4.9)
Requirement already satisfied: numpy>=1.23 in /home/vboxuser/.local/lib/python3.
12/site-packages (from matplotlib) (2.3.5)
Requirement already satisfied: packaging>=20.0 in /home/vboxuser/.local/lib/pyth
on3.12/site-packages (from matplotlib) (25.0)
```

Opsi `pip3 install psutil matplotlib --break-system-packages` digunakan karena sistem Linux membatasi instalasi langsung pada environment sistem.

3.5 Pengecekan Versi Python

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ python3 --version
Python 3.12.3
```

Dilakukan untuk memastikan apakah python3 sudah tersedia di sistem atau tidak.

3.6 Instalasi pip3

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ sudo apt install python3-pip -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3-pip is already the newest version (24.0+dfsg-1ubuntu1.3).
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

pip3 digunakan sebagai alat untuk menginstal library Python

3.7 Instalasi python3-tk

```
vboxuser@lab-linux01:~/Documents/SO_PROJECT$ sudo apt install python3-tk -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
```

library python3-tk diinstal untuk mendukung tampilan grafik dari matplotlib.

4. Hasil yang Diperoleh

Berdasarkan praktik yang telah dilakukan pada progress 1, diperoleh hasil berikut:

1. Folder project SO_PROJECT berhasil dibuat dalam direktori Documents
2. File linux-task-manager.py berhasil dibuat sebagai file utama program.
3. Sistem Linux berhasil diperbarui melalui apt update dan apt upgrade.
4. Library psutil dan matplotlib berhasil diinstal menggunakan pip3
5. Python3 berhasil terdeteksi melalui python –version
6. Pip3 berhasil diinstal dengan package manager tambahan
7. Library python-tk berhasil diinstal untuk mendukung tampilan grafik