

BAB IV

HASIL DAN UJI COBA

IV.1. Software Dan Hardware

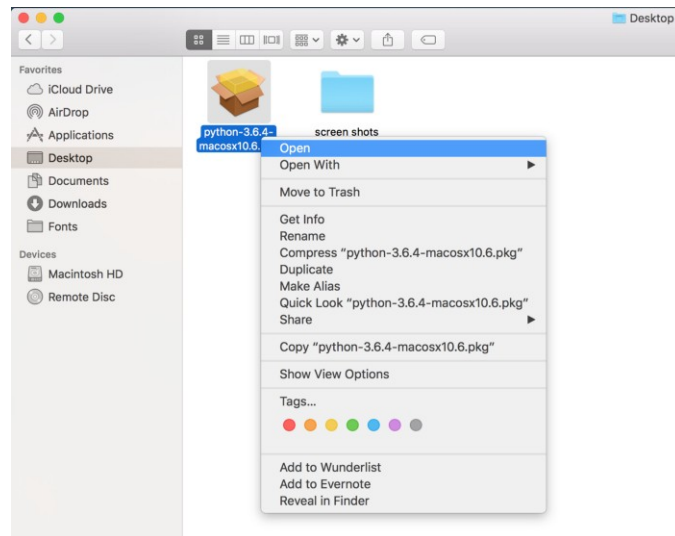
Rancang dan implementasi gelombang otak manusia untuk pengguna napza menggunakan spesifikasi perangkat keras dan perangkat lunak seperti yang ditunjukkan pada Tabel IV.1.

Perangkat	Jenis Perangkat	Spesifikasi
Perangkat Keras	<i>Prosesor</i>	1,8 GHz Dual-Core Intel Core i5
	<i>Memori</i>	8 GB 1600 MHz DDR 3
	<i>Graphics</i>	Intel Hd Graphics 6000 1536 MB
	<i>Storage</i>	121 GB
Perangkat Lunak	Sistem Operasi	MacOS Bigsur
	Perangkat Pengembang	<i>Jupyter, Python, dan Visual Studio Code</i>

Tabel III.3 Informasi *Hardware* dan *Software*

IV.2. Install Python

Perangkat lunak yang digunakan penulis adalah python kali penulis akan menampilkan tatacara instalansi python, silahkan download python di link berikut <https://www.python.org/downloads/macos/> pilih versi yang dibutuhkan.



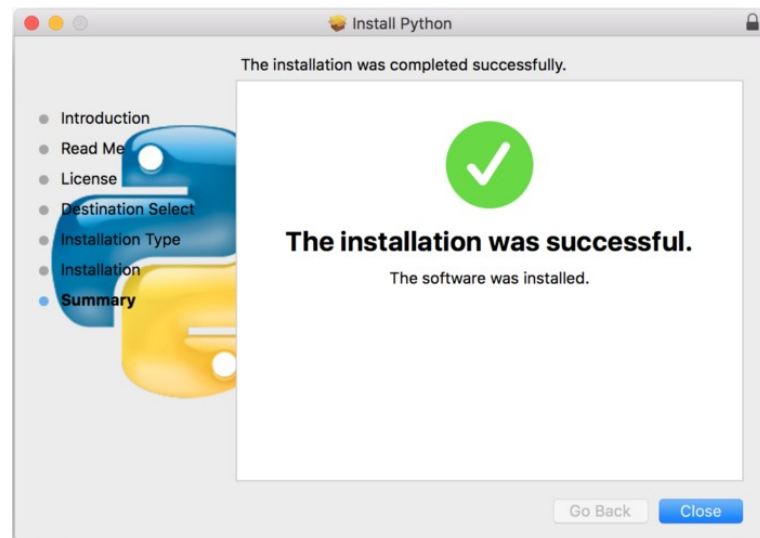
Gambar IV.1. Install Python 1

Klik open



Gambar IV.2. Install Python 2

Klik *Continue* untuk 5 tahapan selanjutnya (*Introduction* sampai *Installation Type*). Kemudian untuk tahap *Installation*, kamu akan diminta memasukkan password user komputer. Selanjutnya tunggu saja proses instalasi sampai berhasil. Akan muncul tampilan seperti berikut dengan pesan ‘Instalasi telah berhasil’.



Gambar IV.3. *Install Python 3*

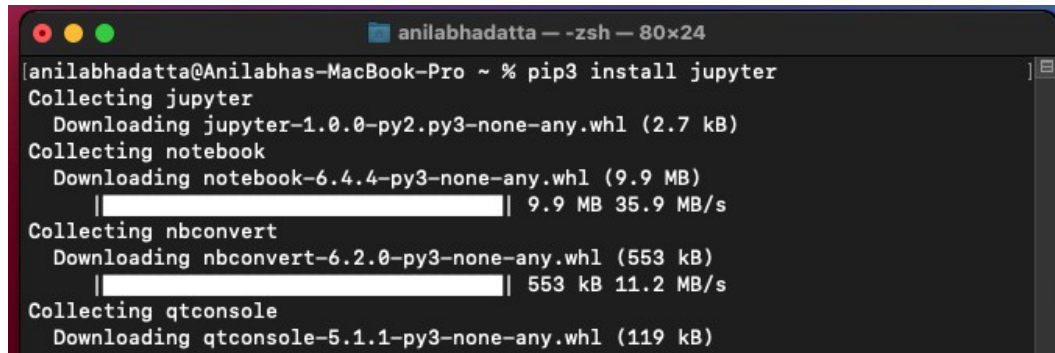
Kita telah **berhasil** menginstall Python versi 3.6.4. Untuk memastikannya, mari kita cek melalui terminal (Command Prompts). Ketikkan saja `python3` pada terminal. Jika Python telah berhasil di-install, maka akan tampil sebagai berikut.



Gambar IV.4. *Install Python 4*

IV.3 Install Jupyter

Pada kali ini penulis menampilkan tatacar install jupyter



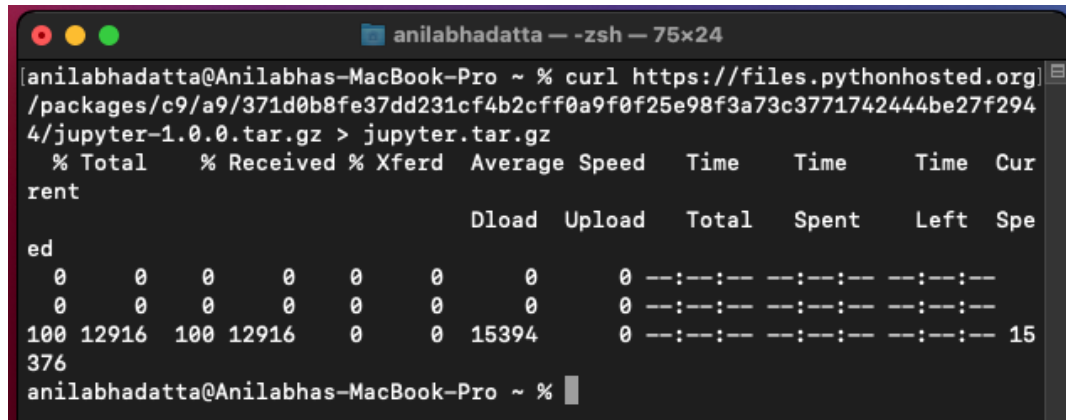
```

[anilabhadatta@Anilabhas-MacBook-Pro ~ % pip3 install jupyter
Collecting jupyter
  Downloading jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)
Collecting notebook
  Downloading notebook-6.4.4-py3-none-any.whl (9.9 MB)
    | 9.9 MB 35.9 MB/s
Collecting nbconvert
  Downloading nbconvert-6.2.0-py3-none-any.whl (553 kB)
    | 553 kB 11.2 MB/s
Collecting qtconsole
  Downloading qtconsole-5.1.1-py3-none-any.whl (119 kB)

```

Gambar IV.5 Install Jupyter 1

Buka terminal lalu ketik “pip3 install jupyter”



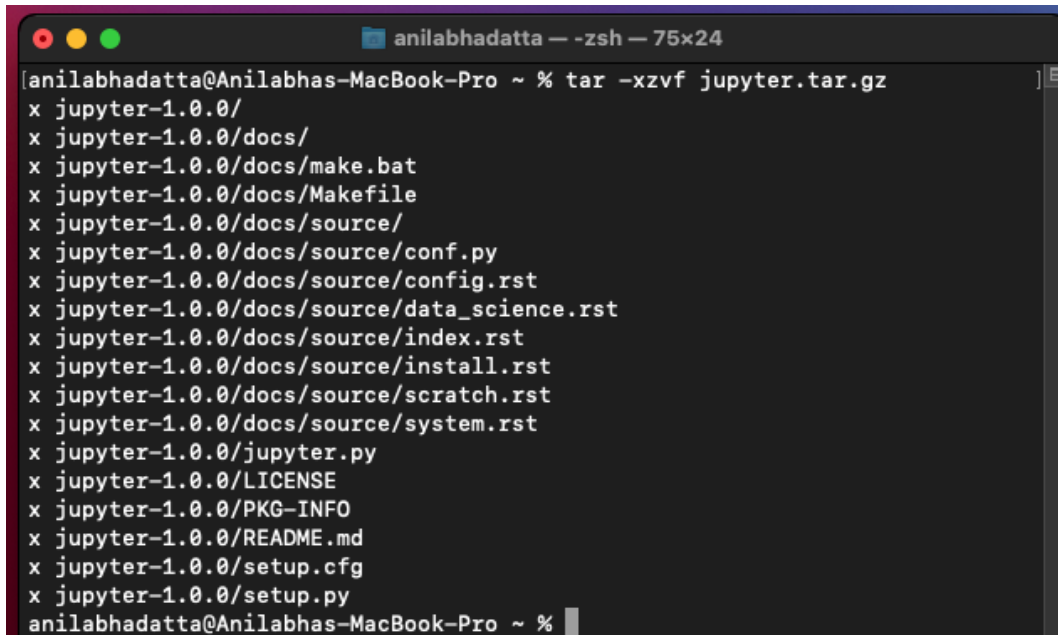
```

[anilabhadatta@Anilabhas-MacBook-Pro ~ % curl https://files.pythonhosted.org
/packages/c9/a9/371d0b8fe37dd231cf4b2cff0a9f0f25e98f3a73c3771742444be27f294
4/jupyter-1.0.0.tar.gz > jupyter.tar.gz
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Cur
rent
                                Dload  Upload  Total  Spent  Left  Spe
ed
   0      0   0    0    0    0     0      0  --:--:-- --:--:-- --:--:--
   0      0   0    0    0    0     0      0  --:--:-- --:--:-- --:--:--
100 12916 100 12916    0    0 15394      0  --:--:-- --:--:-- --:--:-- 15
376
anilabhadatta@Anilabhas-MacBook-Pro ~ %

```

Gambar IV.6 Install Jupyter 2

Selanjutnya *copy paste link* berikut ini pada *terminal* “curl
<https://files.pythonhosted.org/packages/c9/a9/371d0b8fe37dd231cf4b2cff0a9f0f25e98f3a73c3771742444be27f2944/jupyter-1.0.0.tar.gz> > jupyter.tar.gz



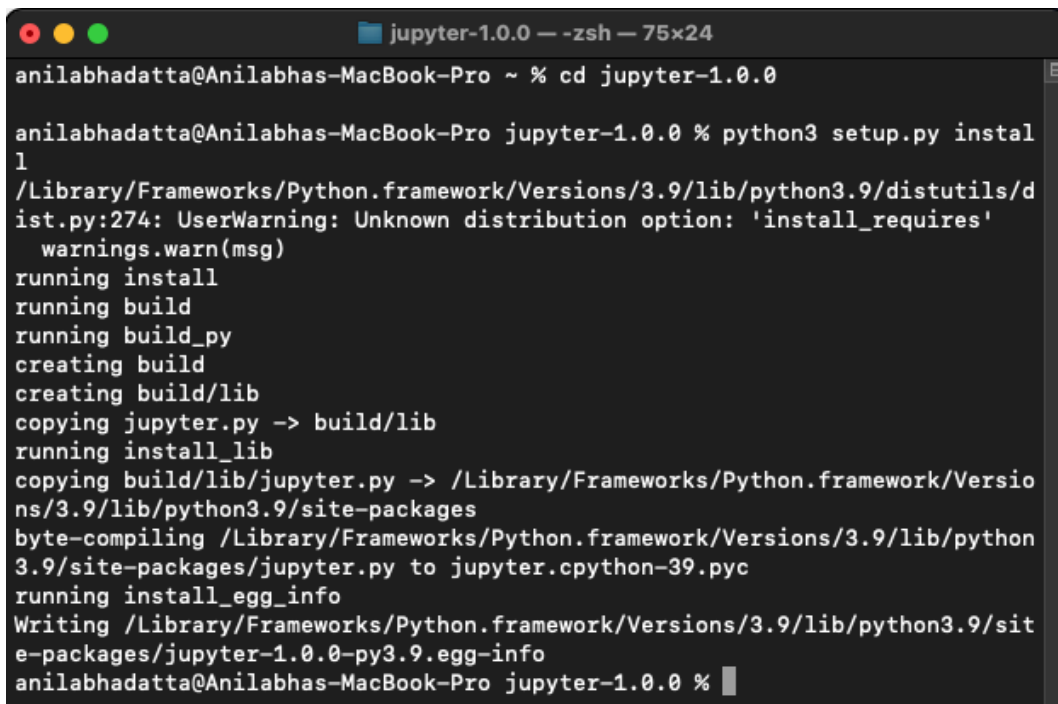
```

anilabhadatta@Anilabhas-MacBook-Pro ~ % tar -xzf jupyter.tar.gz
x jupyter-1.0.0/
x jupyter-1.0.0/docs/
x jupyter-1.0.0/docs/make.bat
x jupyter-1.0.0/docs/Makefile
x jupyter-1.0.0/docs/source/
x jupyter-1.0.0/docs/source/conf.py
x jupyter-1.0.0/docs/source/config.rst
x jupyter-1.0.0/docs/source/data_science.rst
x jupyter-1.0.0/docs/source/index.rst
x jupyter-1.0.0/docs/source/install.rst
x jupyter-1.0.0/docs/source/scratch.rst
x jupyter-1.0.0/docs/source/system.rst
x jupyter-1.0.0/jupyter.py
x jupyter-1.0.0/LICENSE
x jupyter-1.0.0/PKG-INFO
x jupyter-1.0.0/README.md
x jupyter-1.0.0/setup.cfg
x jupyter-1.0.0/setup.py
anilabhadatta@Anilabhas-MacBook-Pro ~ %

```

Gambar IV.7 *Install Jupyter 3*

Ekstrak paket yang diunduh menggunakan perintah berikut.”tar -xzf jupyter.tar.gz”



```

anilabhadatta@Anilabhas-MacBook-Pro ~ % cd jupyter-1.0.0

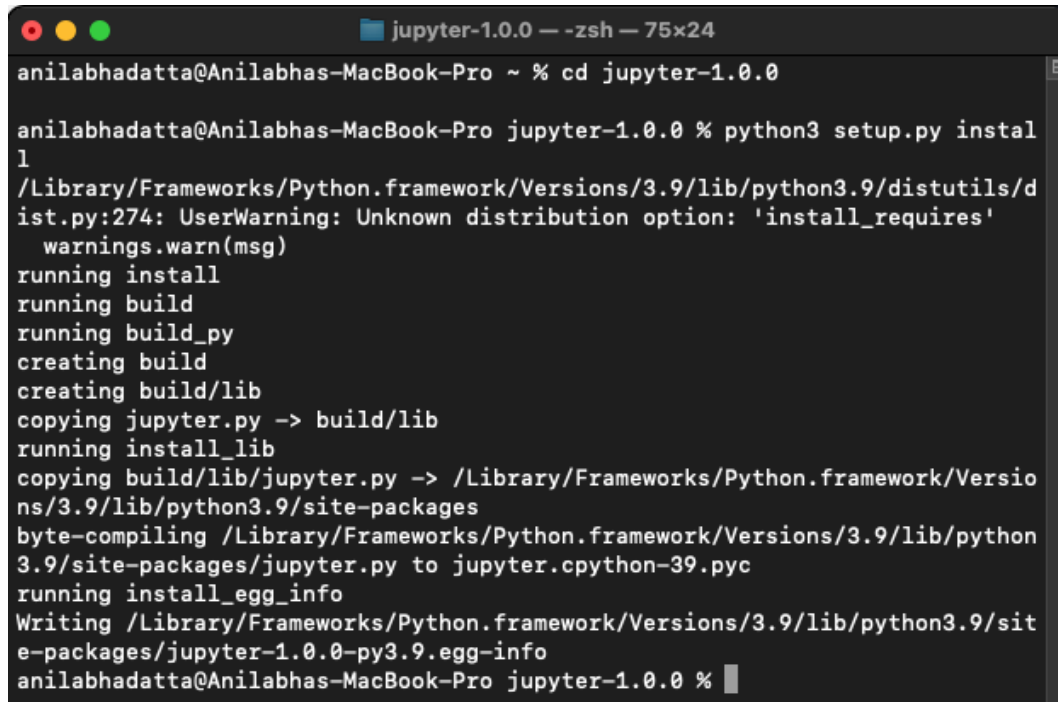
anilabhadatta@Anilabhas-MacBook-Pro jupyter-1.0.0 % python3 setup.py instal
l
/Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/distutils/d
ist.py:274: UserWarning: Unknown distribution option: 'install_requires'
  warnings.warn(msg)
running install
running build
running build_py
creating build
creating build/lib
copying jupyter.py -> build/lib
running install_lib
copying build/lib/jupyter.py -> /Library/Frameworks/Python.framework/Versio
ns/3.9/lib/python3.9/site-packages
byte-compiling /Library/Frameworks/Python.framework/Versions/3.9/lib/python
3.9/site-packages/jupyter.py to jupyter.cpython-39.pyc
running install_egg_info
Writing /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/sit
e-packages/jupyter-1.0.0-py3.9.egg-info
anilabhadatta@Anilabhas-MacBook-Pro jupyter-1.0.0 %

```

Gambar IV.8 *Install Jupyter 4*

Masuk ke dalam folder dan Masukkan perintah berikut untuk menginstal paket.

Dengan perintah “cd jupyter-1.0.0” lalu “python3 setup.py install”

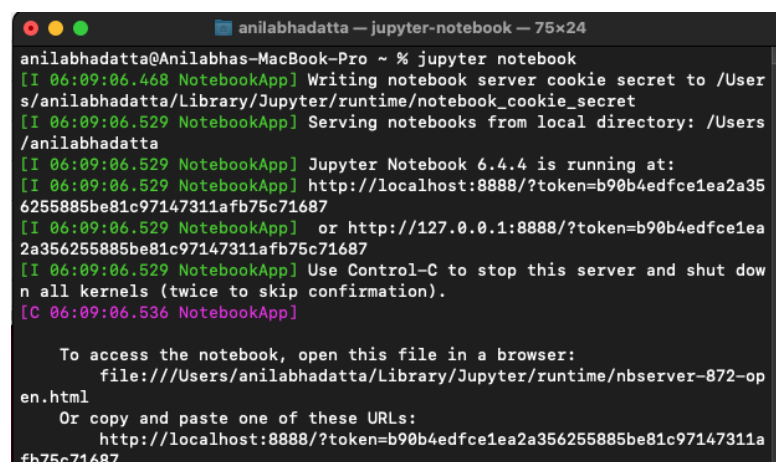


```
jupyter-1.0.0 — zsh — 75x24
anilabhadatta@Anilabhas-MacBook-Pro ~ % cd jupyter-1.0.0

anilabhadatta@Anilabhas-MacBook-Pro jupyter-1.0.0 % python3 setup.py install
/Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/distutils/dist.py:274: UserWarning: Unknown distribution option: 'install_requires'
  warnings.warn(msg)
running install
running build
running build_py
creating build
creating build/lib
copying jupyter.py -> build/lib
running install_lib
copying build/lib/jupyter.py -> /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages
byte-compiling /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages/jupyter.py to jupyter.cpython-39.pyc
running install_egg_info
Writing /Library/Frameworks/Python.framework/Versions/3.9/lib/python3.9/site-packages/jupyter-1.0.0-py3.9.egg-info
anilabhadatta@Anilabhas-MacBook-Pro jupyter-1.0.0 %
```

Gambar IV.9 *Install Jupyter 5*

Masukkan perintah berikut di terminal Anda untuk memulai Notebook Jupyter dan verifikasi apakah instalasi telah dilakukan dengan benar “jupyter notebook”

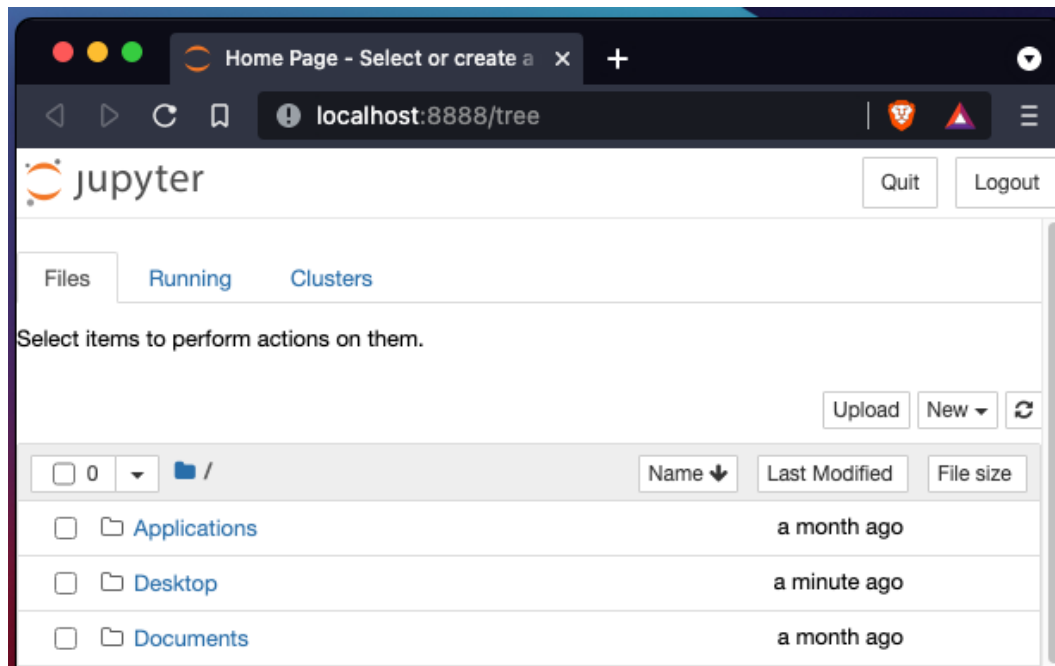


```
anilabhadatta — jupyter-notebook — 75x24
anilabhadatta@Anilabhas-MacBook-Pro ~ % jupyter notebook
[I 06:09:06.468 NotebookApp] Writing notebook server cookie secret to /Users/anilabhadatta/Library/Jupyter/runtime/notebook_cookie_secret
[I 06:09:06.529 NotebookApp] Serving notebooks from local directory: /Users/anilabhadatta
[I 06:09:06.529 NotebookApp] Jupyter Notebook 6.4.4 is running at:
[I 06:09:06.529 NotebookApp] http://localhost:8888/?token=b90b4edfce1ea2a356255885be81c97147311afb75c71687
[I 06:09:06.529 NotebookApp] or http://127.0.0.1:8888/?token=b90b4edfce1ea2a356255885be81c97147311afb75c71687
[I 06:09:06.529 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 06:09:06.536 NotebookApp]

To access the notebook, open this file in a browser:
file:///Users/anilabhadatta/Library/Jupyter/runtime/nbserver-872-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=b90b4edfce1ea2a356255885be81c97147311afb75c71687
```

Gambar IV.10 *Install Jupyter 6*

Secara otomatis akan membuka browser default



Gambar IV.9 Install Jupyter 7

IV.4. Install Library Python

Penulis akan menampilkan tatacara instalansi library python yang diperlukan pada penelitian kali ini.

Nama Library	Fungsi Library	Instalansi
<i>Numpy</i>	Operasi matematika dan logik dalam sebuah <i>array</i> , • Melakukan <i>fourier transform</i>, dan, • Melakukan operasi aljabar linear.	“pip3 install numpy”
<i>Pandas</i>	Pandas melakukan tugas penting seperti menyelaraskan data untuk perbandingan dan penggabungan set data, penanganan data yang hilang, dll, itu telah menjadi sebuah librari de facto untuk pemrosesan data tingkat tinggi dalam Python (yaitu statistik)	“pip3 install pandas”

<i>Tqdm</i>	Mempercepat proses pembacaan data yang telah di impor	“pip3 install tqdm”
<i>Matplotlib</i>	Memvisualisasikan data dalam bentuk grafik	“pip3 install matplotlib”
<i>Plotly</i>	Membuat bagan interaktif berkualitas publikasi seperti bagan garis, bagan sebar, bagan area, bagan galat, bilah galat, bagan kotak, histogram, peta panas, sub-bagan, dan banyak lagi.	“pip3 install plotly”
<i>Scipy</i>	Memecahkan masalah dalam hal ilmiah dan matematika	“pip3 install scipy”
<i>Sklearn</i>	Scikit-learn atau sklearn merupakan sebuah module dari bahasa pemrograman <i>Python</i> yang dibangun berdasarkan <i>NumPy</i> , <i>SciPy</i> , dan <i>Matplotlib</i> . Fungsi dari module ini adalah untuk membantu melakukan processing data ataupun melakukan training data untuk kebutuhan <i>machine learning</i> atau <i>data science</i> .	“pip3 install sklearn”

Tabel III.3 *Install Library Python*

