

JOB SHEET

WORKSHOP SMART CLASSROOM

FACE RECOGNITION DAN FINGERPRINT
(COMPUTER VISION)

SMKN 6 Malang

Disusun Oleh:

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1. PENDAHULUAN



Gambar 1. 1 Computer Vision

Dalam era digital yang berkembang pesat, Computer Vision (CV) telah menjadi konsep revolusioner yang mengubah paradigma interaksi manusia dengan teknologi dan lingkungan sekitar. CV memungkinkan komputer untuk "melihat" dan "memahami" dunia visual seperti manusia, membuka pintu untuk inovasi yang mendalam dan beragam dalam berbagai bidang.kenyamanan.

1.1 TEORI DASAR

Sebelum kita memahami Computer Vision, penting untuk memahami bahwa computer vision adalah cabang dari ilmu komputer yang berkaitan dengan pemahaman, analisis, dan interpretasi informasi visual dari dunia nyata, yang biasanya diperoleh melalui kamera atau sensor visual lainnya. Tujuannya adalah untuk mengizinkan komputer untuk memproses, memahami, dan mengambil keputusan berdasarkan data visual. Berikut beberapa teori dasar dalam computer vision:

- **Pengolahan Citra:** Ini adalah langkah awal dalam computer vision di mana citra visual dari dunia nyata diterjemahkan ke dalam format yang dapat diolah oleh komputer. Ini melibatkan filter, segmentasi, ekstraksi fitur, dan transformasi citra.
- **Segmentasi:** Segmentasi mencoba untuk memisahkan objek-objek yang berbeda dalam citra, yang berarti mengidentifikasi batas antara objek-objek tersebut. Ini memungkinkan komputer untuk mengenali objek secara terpisah.

- **Pelacakan Objek:** Pelacakan objek adalah kemampuan untuk melacak pergerakan objek dalam rangkaian citra atau dalam video. Ini berguna dalam aplikasi seperti pengawasan video, kendaraan otonom, dan augmented reality.

1.2 PENGERTIAN COMPUTER VISION



Gambar 1. 2 Computer Vision

Computer Vision (CV) adalah cabang dari kecerdasan buatan yang berkaitan dengan kemampuan komputer untuk memahami, menganalisis, dan menafsirkan gambar dan video yang dihasilkan oleh dunia nyata. Secara singkat, computer vision memungkinkan komputer untuk "melihat" dan memahami dunia seperti yang dilakukan manusia, dengan tujuan seperti pengenalan objek, deteksi pola, pelacakan objek, dan banyak lagi, semuanya berdasarkan data visual yang diterima oleh kamera atau sensor optik. Ini merupakan teknologi kunci dalam berbagai aplikasi, termasuk kendaraan otonom, pengenalan wajah, pengolahan medis, dan banyak lagi.

1.3 PERKEMBANGAN COMPUTER VISION PADA ERA SEKARANG

Dalam era digital yang terus berkembang, perkembangan Computer Vision (CV) telah menjadi lebih menarik daripada sebelumnya. Saat kita terus berinteraksi dengan teknologi dan lingkungan sekitar kita, CV menjadi semakin terintegrasi dalam kehidupan sehari-hari. Penggunaan pengenalan objek yang dapat dihubungkan dengan aplikasi ponsel pintar, dan dihubungkan ke kendaraan otonom, semuanya adalah contoh konkret dari bagaimana Computer Vision telah merubah cara kita berinteraksi dengan dunia di sekitar kita. Berikut merupakan contoh perkembangan Computer Vision pada era sekarang:

1. Pengenalan Objek (You Only Look Once).
2. Pengenalan Wajah (Haarscade).
3. Mobil Otonom.
4. Klasifikasi Medis.
5. Pencocokan Gambar (Fingerprint).

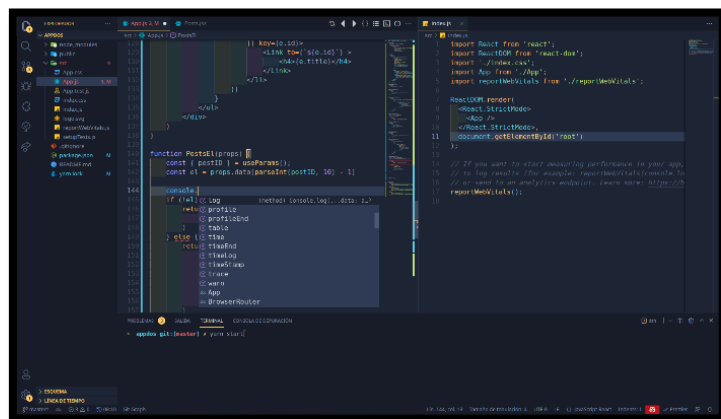
2. PERSIAPAN PRAKTIKUM

2.1.1 HARDWARE

No.	Item.	Type.	Picture.
1	Webcam Laptop	Menyesuaikan	Menyesuaikan
2	Laptop	Windows/Mac	Menyesuaikan

2.2 SOFTWARE

2.2.1 VISUAL STUDIO CODE



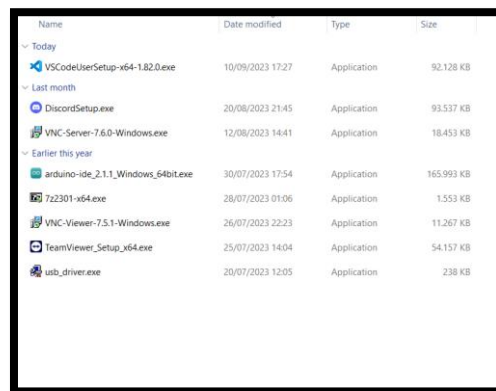
Gambar 2. 1 Visual Studio Code

Visual Studio Code (VS Code) adalah sebuah editor kode sumber terintegrasi yang sangat populer yang dikembangkan oleh Microsoft. Ini adalah perangkat lunak yang digunakan oleh pengembang perangkat lunak untuk menulis, mengedit, dan mengelola kode dalam berbagai bahasa pemrograman. VS Code memiliki banyak fitur berguna, seperti penyorotan sintaksis, saran otomatis, pemecah kode, dan integrasi dengan alat pengembangan yang berbeda.

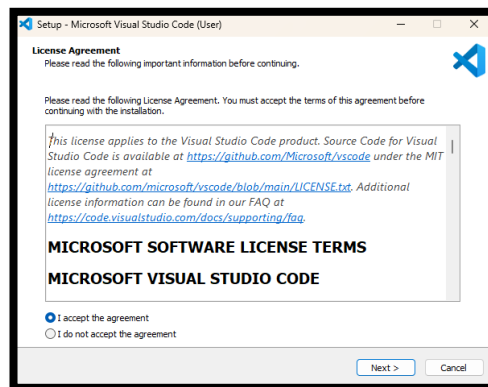
3. LANGKAH-LANGKAH PRAKTIKUM

3.1 INSTALASI VISUAL STUDIO CODE

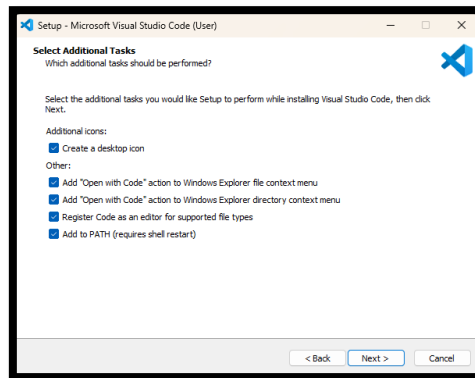
1. Download Visual Studio Code melalui <https://code.visualstudio.com/download>
2. Install Visual Studio Code dengan cara klik dua kali pada Installer nya



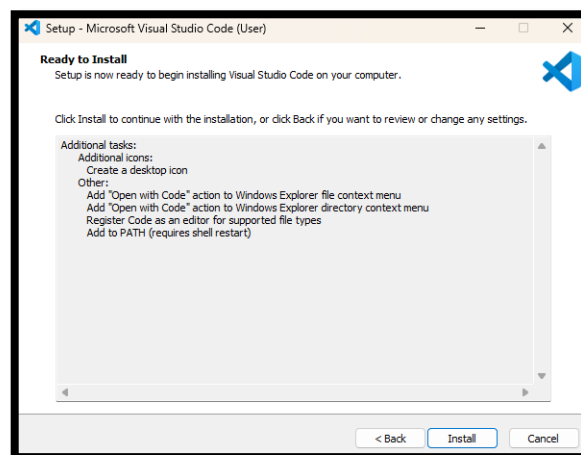
3. Pilih I Accept the agreement



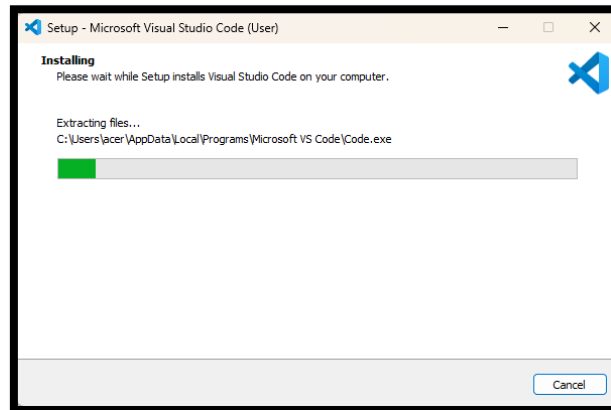
4. Centang semua pilihan dan pilih **Next**



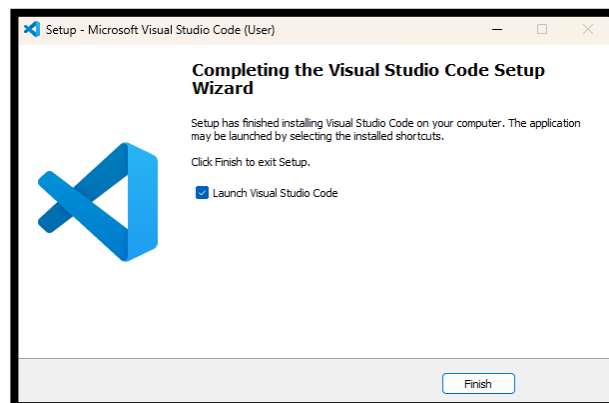
5. Klik **Install**



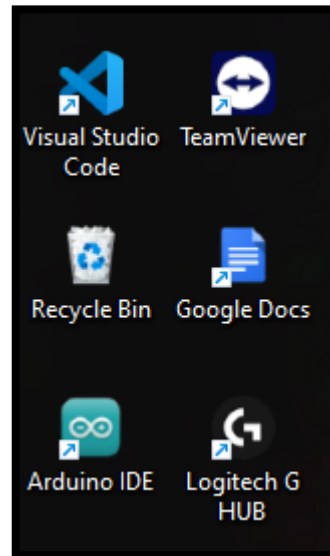
6. Tunggu hingga proses instalasi selesai



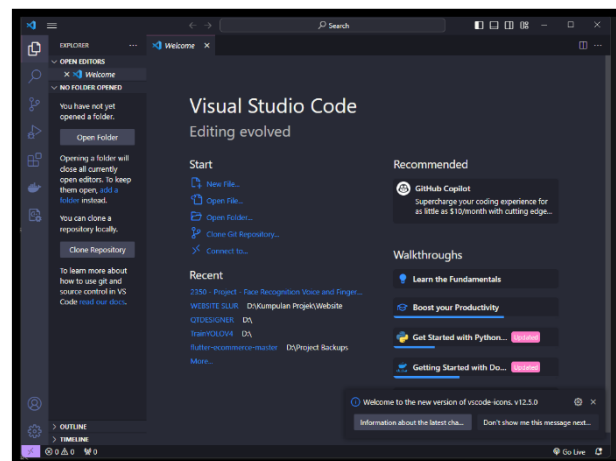
7. Proses instalasi selesai dan pilih **Finish**



8. Visual Studio Code akan muncul pada tampilan desktop



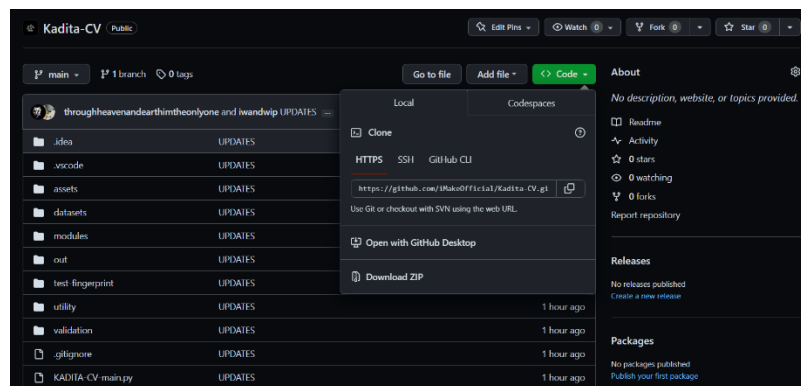
9. Buka Visual Studio Code



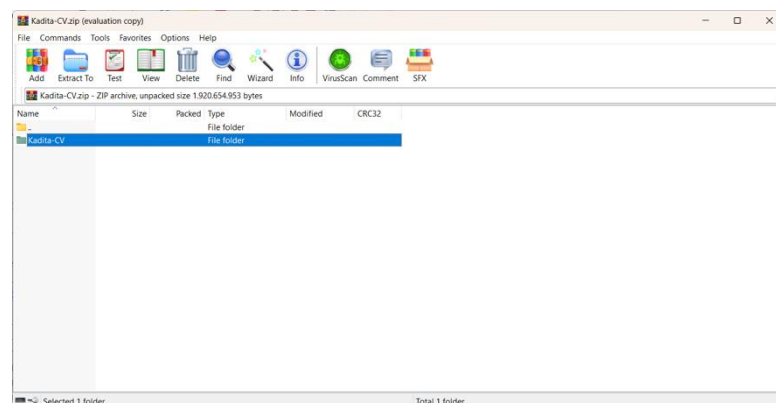
3.2 INSTALASI FRAMEWORK KADITA-CV PADA VISUAL STUDIO CODE

1. Download ZIP file Kadita-CV di Github pada link di bawah:

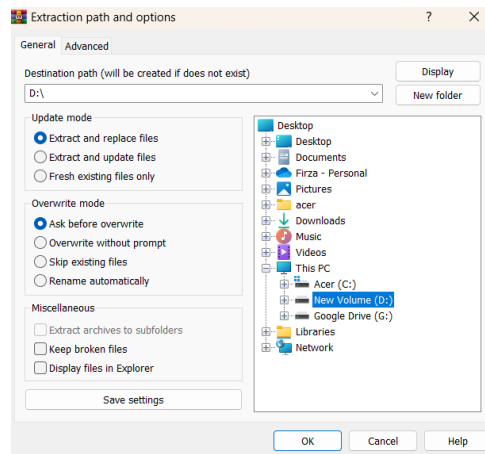
<https://github.com/iMakeOfficial/240-KDT-WORKSHOP-CV>



2. Buka file .zip menggunakan RAR extractor (winrar/7zip)



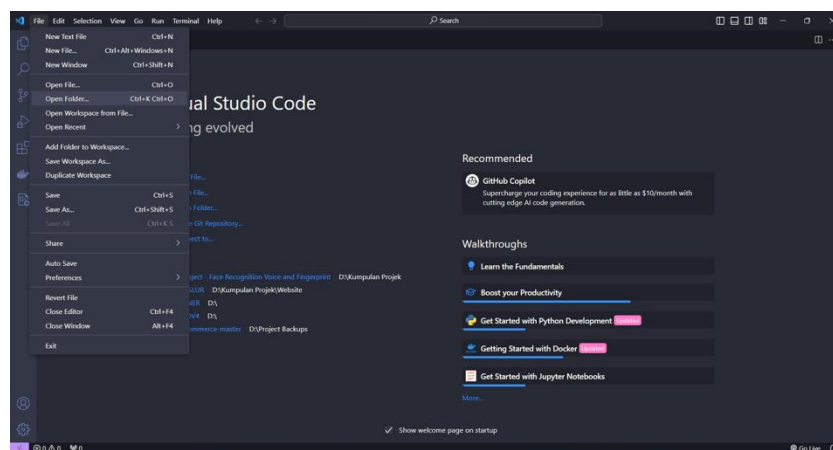
3. Ekstrak ke folder yang anda inginkan



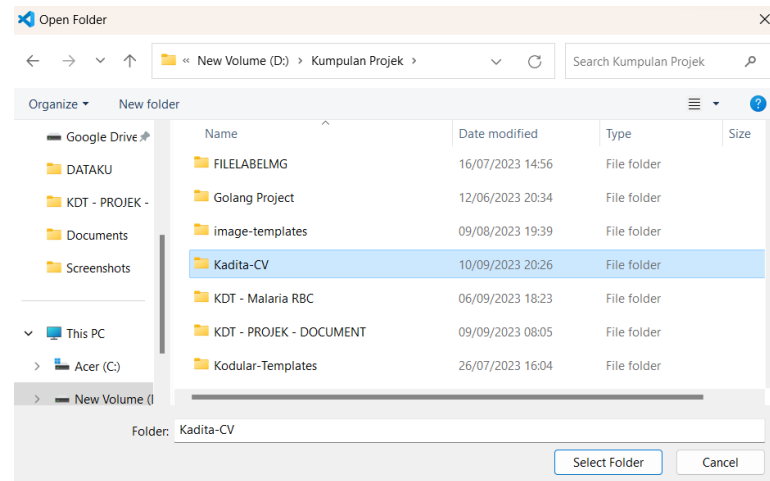
4. Setelah di ekstrak lalu muncul file seperti ini :

Kadita-CV	10/09/2023 20:26	File folder
KDT - Malaria RBC	06/09/2023 18:23	File folder
KDT - PROJEK - DOCUMENT	09/09/2023 08:05	File folder

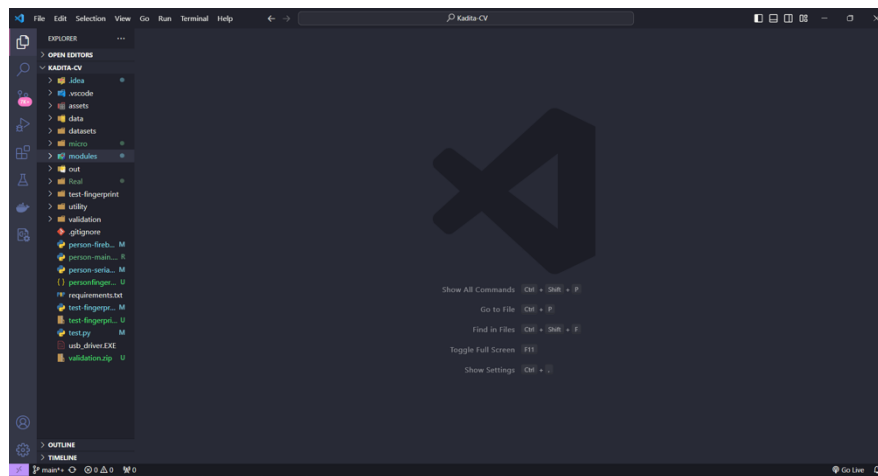
5. Selanjutnya buka Visual Studio Code lalu pilih menu **Open Folder**



6. Select Folder Kadita-CV

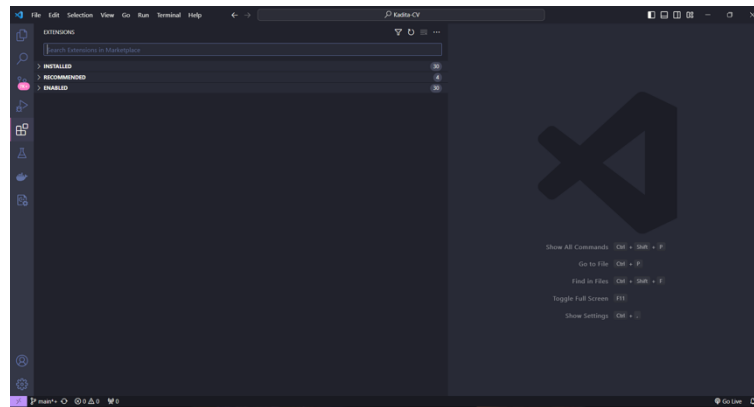


7. Lalu akan muncul menu seperti ini, artinya kamu sudah berhasil.

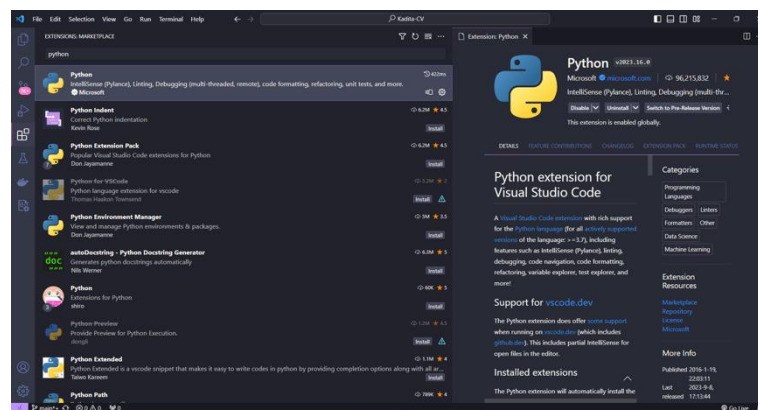


3.3 INSTALL PACKAGE VISUAL STUDIO CODE

1. Buka Extension di Visual Studio Code dengan menekan keyboard **CTRL+SHIFT+X**



2. Lalu ketik **“Python”** di kolom pencarian lalu install.



3. Setelah itu download Python dengan link dibawah ini

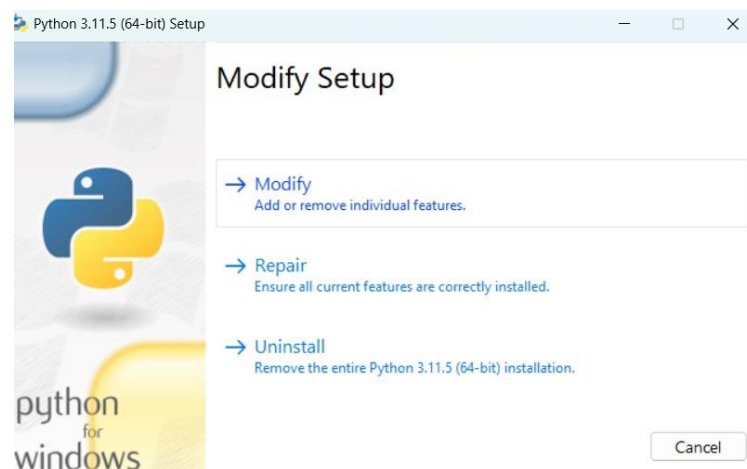
<https://www.python.org/downloads/>



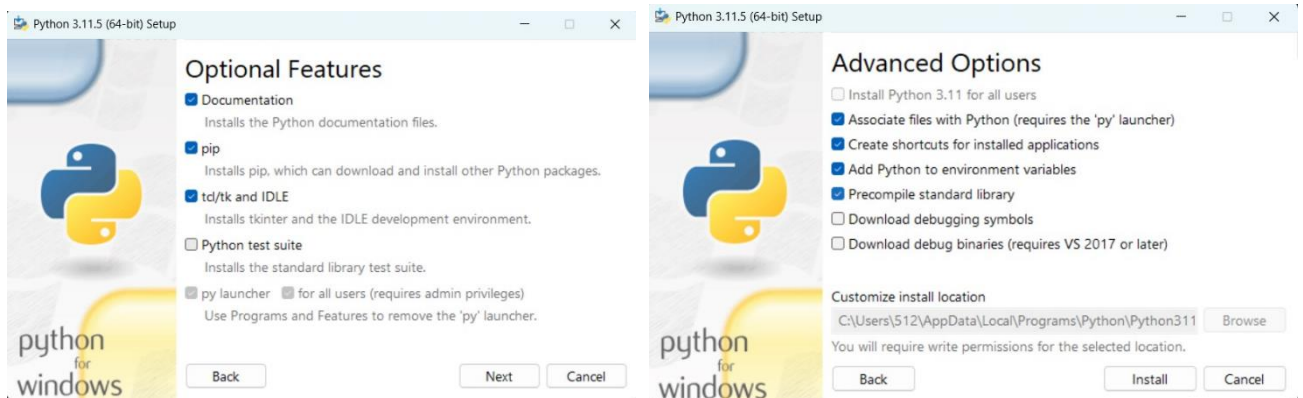
4. Tekan Install Now.



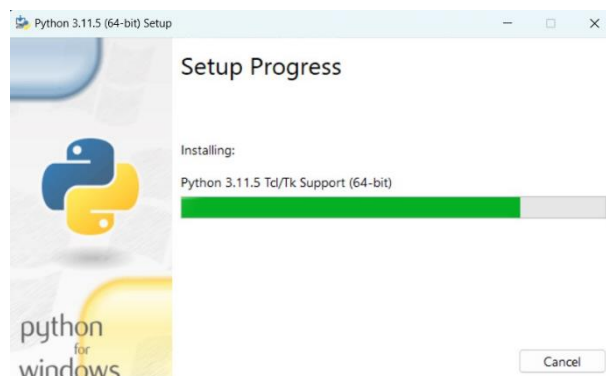
5. Setelah ditekan Install Now, maka selanjutnya tekan **Modify**



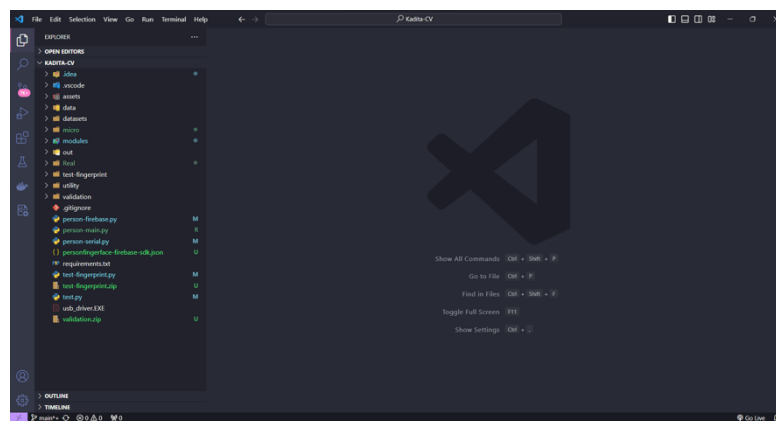
6. Selanjutnya, centang semua option sebagai berikut



7. Lalu tunggu proses instalasinya



8. Pergi ke folder “**Kadita-CV**”.



9. Buka terminal, lalu ketik “**pip install -r requirements.txt**”

```

1 # Usage: pip install -r requirements.txt
2
3 # Base -----
4 pygame>=2.5.1
5 gitpython>=3.1.30
6 Adafruit-Blinka>=8.20.1
7 Adafruit-PlatformDetect>=3.49.0
8 Adafruit-PureIO>=1.1.11
9 adafruit-circuitpython-busdevice>=5.2.0
10 adafruit-circuitpython-fingerprint>=2.2.12
11 adafruit-circuitpython-requests>=2.0.1
12 adafruit-circuitpython-typing>=1.0.4
13 dlib>=19.24.2
14 lmmsio>=0.5.4
15 numpy>=1.25.2
16 opencv-contrib-python>=4.7.0.72
17 matplotlib>=3.5.1
18 numpy>=1.18.5
19 opencv-python>=4.1.1
20 Pillow>=7.1.2
  
```

PS D:\Vumpulan Projek\Kasta-CV> pip install -r requirements.txt

10. Setelah menginstall semua package, akan keluar keterangan seperti di bawah:

```

Requirement already satisfied: packaging>=20.0 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from matplotlib>=3.5.1->-r requirements.txt (line 18)) (21.3)
Requirement already satisfied: pyparsing>=2.2.1 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from matplotlib>=3.5.1->-r requirements.txt (line 18)) (3.0.8)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from matplotlib>=3.5.1->-r requirements.txt (line 18)) (2.8.2)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from requests>=2.27.0->-r requirements.txt (line 24)) (1.26.16)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from requests>=2.27.0->-r requirements.txt (line 24)) (2021.10.8)
Requirement already satisfied: charset-normalizer>=2.0.0 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from requests>=2.27.0->-r requirements.txt (line 24)) (2.0.12)
Requirement already satisfied: idna<4,>=2.5 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from requests>=2.27.0->-r requirements.txt (line 24)) (3.3)
Requirement already satisfied: filelock in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from torch>=1.7.0->-r requirements.txt (line 27)) (3.12.2)
Requirement already satisfied: networkx in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from torch>=1.7.0->-r requirements.txt (line 27)) (3.1)
Requirement already satisfied: Jinja2 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from torch>=1.7.0->-r requirements.txt (line 27)) (3.1.2)
Requirement already satisfied: colorama in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from tqdm>=4.64.0->-r requirements.txt (line 29)) (0.4.5)
Requirement already satisfied: py-cpuinfo in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from ultralytics>=8.0.173->-r requirements.txt (line 30)) (9.0.0)
Requirement already satisfied: pytz>=2020.1 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from pandas>=1.4.2->-r requirements.txt (line 40)) (2022.1)
Requirement already satisfied: smmap6>=3.0.1 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from gitdb<5,>=4.0.1->gitpython>=3.1.30->-r requirements.txt (line 5)) (5.0.0)
Requirement already satisfied: pyusb<1.2.0,>=1.0.0 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from pyftdi>=0.40.0->Adafruit-Blinka>=8.20.1->-r requirements.txt (line 6)) (1.2.1)
Requirement already satisfied: six>=1.5 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from python-dateutil>=2.7->matplotlib>=3.5.1->-r requirements.txt (line 18)) (1.16.0)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from Jinja2->torch>=1.7.0->-r requirements.txt (line 27)) (2.1.1)
Requirement already satisfied: mpmath>=0.19 in c:\users\acer\appdata\local\programs\python\python310\lib\site-packages (from sympy->torch>=1.7.0->-r requirements.txt (line 27)) (1.3.0)
Downloading numpy-1.25.2-cp310-cp310-win_amd64.whl (15.6 MB)
Installing collected packages: numpy
  Attempting uninstall: numpy
    Found existing installation: numpy 1.25.0
    Uninstalling numpy-1.25.0:
      Successfully uninstalled numpy-1.25.0
  Successfully installed numpy-1.25.2
  
```



```

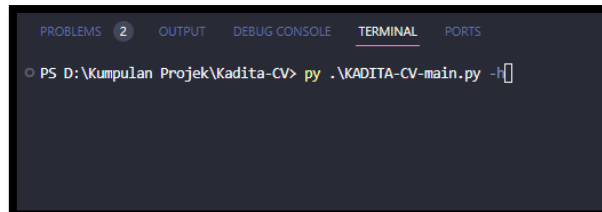
1 #!/usr/bin/env python
2 # coding: utf-8
3
4 import argparse
5 import time
6 import sys
7 import os
8
9 from modules.KADITAPWGC import KADITAPWGC
10 from modules.KADITASIS import FaceDetection
11 from modules.KADITASIS import FaceRecognitionTraining
12 from modules.KADITASIS import FingerprintController
13 from modules.KADITASIS import KADITASIS as KADITASIS
14 from modules.KADITASIS import Image as Image
15 from utility.data import VMLDataHandler
16
17 if __name__ == '__main__':
18     parser = argparse.ArgumentParser(description='KADITA CV MAIN SCRIPT OF SIXTH KADITA CV PAKS CONNECTION')
19     parser.add_argument('-sample', type=bool, default=False, help='Apakah Ingin Mengambil sample Y/N? [True / False] (Y/N)')
20     parser.add_argument('-n', type=int, default=10, help='Number of Samples to (Face - 100) (Fingerprint - 100) (Y/N)')
21     parser.add_argument('-type', type=str, default='face', help='Penggunaan Show Y/N (Face - 100) (Fingerprint - 100) (Y/N)')
22     parser.add_argument('-del_all', type=bool, default=False, help='Hapus Semua user (Y/N) (Face - 100) (Fingerprint - 100) (Y/N)')
23     parser.add_argument('-show', type=bool, default=False, help='Menampilkan Semua user Y/N (Face - 100) (Fingerprint - 100) (Y/N)')
24     args = parser.parse_args()
25
26     print("[INFO] Main Initialize")
27     face = FaceRecognition()
28     if args.del_all is not None:
29         face.deleteAllUser()
30     elif args.show is not None:
31         face.showUser()
32     elif args.type is not None:
33         face.deleteUser(args.delete)
34         t = FaceRecognitionTraining()
35         t.train()
36     else:
37         fingerprint_controller = FingerprintController()
38         fingerprint_controller.initialize()
39         fingerprint_training = fingerprint_controller.trainFingerprint()
40         face_capture(args.sample)
41         face_capture(args.sample)
42         cmd = KADITAPWGC(login=True, addr='data/person/mm-mm')
43         yolo = YOLO()
44         yolo.load('assets/models/yolov4-tiny-custom', final_weights='assets/config/yolov4-tiny-custom.cfg',
45                 'assets/class/person.names')
46         yolo.load('assets/models/yolov4-tiny-custom', final_weights='assets/config/yolov4-tiny-custom.cfg',
47                 'assets/class/person.names')
48         data = VMLDataHandler('src/KADITA-CV-output/data.yml')

```

3.4 PRAKTIKUM 2 – FACE RECOGNITION

3.4.1 JALANKAN PROGRAM HELP PADA TRAINING FACE RECOGNITION

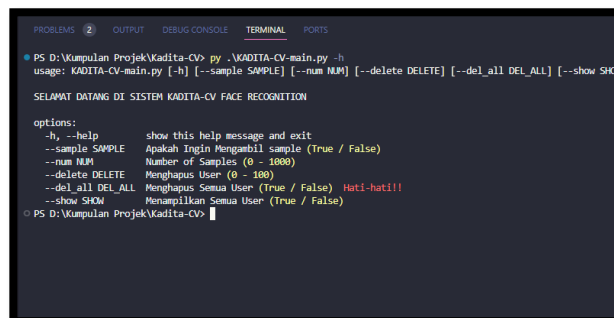
1. Buka Terminal di Visual Studio Code, lalu ketik “**py .\KADITA-CV-main.py -h**”



```

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py -h
  
```

2. Akan keluar tampilan yang berupa beberapa perintah untuk menggunakan Framework:



```

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py -h
usage: KADITA-CV-main.py [-h] [--sample SAMPLE] [--num NUM] [--delete DELETE] [--del_all DEL_ALL] [--show SHOW]

SELAMAT DATANG DI SISTEM KADITA-CV FACE RECOGNITION

options:
  -h, --help            show this help message and exit
  --sample SAMPLE        Apakah Ingin Mengambil sample (True / False)
  --num NUM              Number of Samples (0 - 1000)
  --delete DELETE        Menghapus User (0 - 100)
  --del_all DEL_ALL      Menghapus Semua User (True / False) Hati-hatiii
  --show SHOW            Menampilkan Semua User (True / False)

PS D:\Kumpulan Projek\Kadita-CV>
  
```

3.4.2 JALANKAN PROGRAM UNTUK MENGAMBIL SAMPLE WAJAH

1. Tetap di terminal, lalu ketik “**py .\KADITA-CV-main.py --sample True --num 200**”
 Untuk pengambilan sampel (--num) di isi menyesuaikan dengan kebutuhan dalam range mulai dari 0-1000. Sebagai contoh diambil sample 200 untuk training wajah.



```

PROBLEMS 10 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --sample True --num 200
  
```

- Setelah masuk program untuk selanjutnya tekan “q” untuk keluar dari Program Fingerprint.

```
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --sample True --num 200
[INFO] Main Initialize
SELAMAT DATANG DI SISTEM KADITA-CV FINGERPRINT
-----
e) Training Fingerprint
f) Deteksi dengan Fingerprint
d) Hapus User pada Fingerprint
s) Simpan Gambar Fingerprint
q) Continue to Program Face Recognition
x) Exit Fingerprint Recognition Program
> q
Exiting fingerprint program
```

- Masukan ID dan Nama yang ingin anda input mulai dari (0-100) disini saya ambil contoh ID:1 dan Nama:Firza.

```
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --sample True --num 200
[INFO] Main Initialize
SELAMAT DATANG DI SISTEM KADITA-CV FINGERPRINT
-----
e) Training Fingerprint
f) Deteksi dengan Fingerprint
d) Hapus User pada Fingerprint
s) Simpan Gambar Fingerprint
q) Continue to Program Face Recognition
x) Exit Fingerprint Recognition Program
> q
Exiting fingerprint program
[INFO] Input your ID's : 1
[INFO] Input your Name's : Firza
```

- Masing - masing anda semua harus menghadap ke Webcam pada Laptop untuk mengambil sample wajah sendiri.

```
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --sample True --num 200
[INFO] Main Initialize
SELAMAT DATANG DI SISTEM KADITA-CV FINGERPRINT
-----
e) Training Fingerprint
f) Deteksi dengan Fingerprint
d) Hapus User pada Fingerprint
s) Simpan Gambar Fingerprint
q) Continue to Program Face Recognition
x) Exit Fingerprint Recognition Program
> q
Exiting fingerprint program
[INFO] Input your ID's : 1
[INFO] Input your Name's : Firza
[INFO] Input ID's Success..
[INFO] Face the camera
[INFO] Face the camera [ 5 ]
[INFO] Face the camera [ 4 ]
[INFO] Face the camera [ 3 ]
[INFO] Face the camera [ 2 ]
[INFO] Face the camera [ 1 ]
```

5. Selanjutnya system menunjukkan proses pengambilan data wajah melalui terminal.

```
[INFO] User 1 Image Saved 175
[INFO] User 1 Image Saved 176
[INFO] User 1 Image Saved 177
[INFO] User 1 Image Saved 178
[INFO] User 1 Image Saved 179
[INFO] User 1 Image Saved 180
[INFO] User 1 Image Saved 181
[INFO] User 1 Image Saved 182
[INFO] User 1 Image Saved 183
[INFO] User 1 Image Saved 184
[INFO] User 1 Image Saved 185
[INFO] User 1 Image Saved 186
[INFO] User 1 Image Saved 187
[INFO] User 1 Image Saved 188
[INFO] User 1 Image Saved 189
[INFO] User 1 Image Saved 190
[INFO] User 1 Image Saved 191
[INFO] User 1 Image Saved 192
[INFO] User 1 Image Saved 193
[INFO] User 1 Image Saved 194
[INFO] User 1 Image Saved 195
[INFO] User 1 Image Saved 196
[INFO] User 1 Image Saved 197
[INFO] User 1 Image Saved 198
[INFO] User 1 Image Saved 199
[INFO] User 1 Image Saved 200
[INFO] Started Training
[INFO] Training Finished
PS D:\Kumpulan Projek\Kadita-CV>
```

3.4.3 MENGHAPUS BEBERAPA USER

1. Tetap di terminal, lalu ketik **py .\KADITA-CV-main.py --delete** 2. Untuk menghapus user tergantung dari user mana yang ingin dihapus.

```
PROBLEMS 18 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --delete
```

2. Selanjutnya system menunjukkan proses penghapusan data melalui terminal:

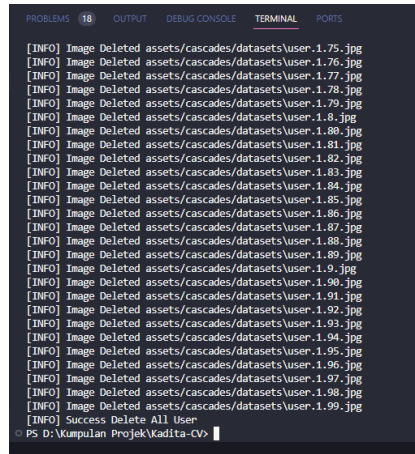
```
[INFO] Image Deleted assets/cascades/datasets/user.2.32.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.33.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.34.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.35.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.36.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.37.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.38.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.39.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.4.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.40.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.41.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.42.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.43.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.44.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.45.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.46.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.47.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.48.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.49.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.5.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.50.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.6.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.7.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.8.jpg
[INFO] Image Deleted assets/cascades/datasets/user.2.9.jpg
[INFO] Success Delete User: 2
[INFO] Started Training
[INFO] Training Finished
PS D:\Kumpulan Projek\Kadita-CV>
```

3.4.4 MENGHAPUS SEMUA USER

1. Di terminal, ketik `py .\KADITA-CV-main.py --del_all DEL_ALL`, hati hati jika anda menggunakan perintah ini dikarenakan dengan perintah ini akan menghapus semua User di program.

```
PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --del_all DEL_ALL
```

- Setelah program dijalankan maka system akan menunjukkan proses hapus semua user pada terminal

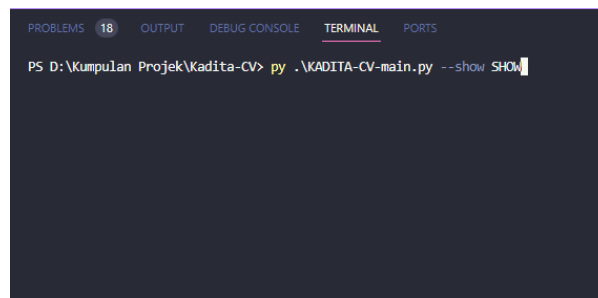


```

[INFO] Image Deleted assets/cascades/datasets/user-1.75.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.76.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.77.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.78.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.79.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.8.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.80.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.81.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.82.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.83.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.84.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.85.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.86.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.87.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.88.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.89.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.9.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.90.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.91.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.92.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.93.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.94.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.95.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.96.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.97.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.98.jpg
[INFO] Image Deleted assets/cascades/datasets/user-1.99.jpg
[INFO] Success Delete All User
PS D:\Kumpulan Projek\Kadita-CV>
  
```

3.4.5 MENAMPILKAN SEMUA USER

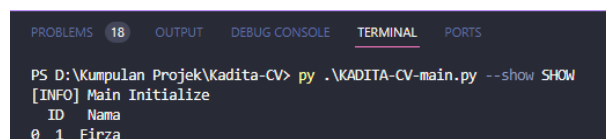
- Untuk mengetahui semua User di suatu sistemnya, maka ketik di terminal **“py .\KADITA-CV-main.py --show SHOW”**



```

PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --show SHOW
  
```

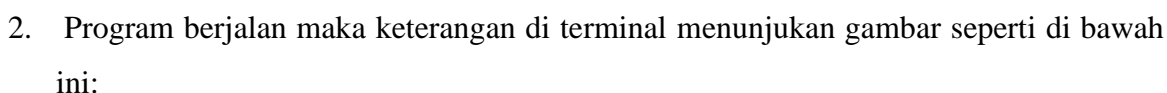
- Setelah itu program akan berjalan, lalu menampilkan semua Usernya seperti ini



```

PS D:\Kumpulan Projek\Kadita-CV> py .\KADITA-CV-main.py --show SHOW
[INFO] Main Initialize
ID  Nama
0  1  Firza
  
```

1. Setelah data training siap, maka langkah selanjutnya adalah menjalankan program utama dengan cara mengetik “**py .\KADITA-CV-main.py**” untuk mendapatkan hasil dari Face Recognition. Berikut adalah contohnya :

[illegible]

Sewaktu tidak terdeteksi wajah maka di terminal keluar keterangan seperti di bawah :

