

Nama : Ambar Wati
NIM : 20.01.013.001
Mata Kuliah : Pemrograman Python (C)

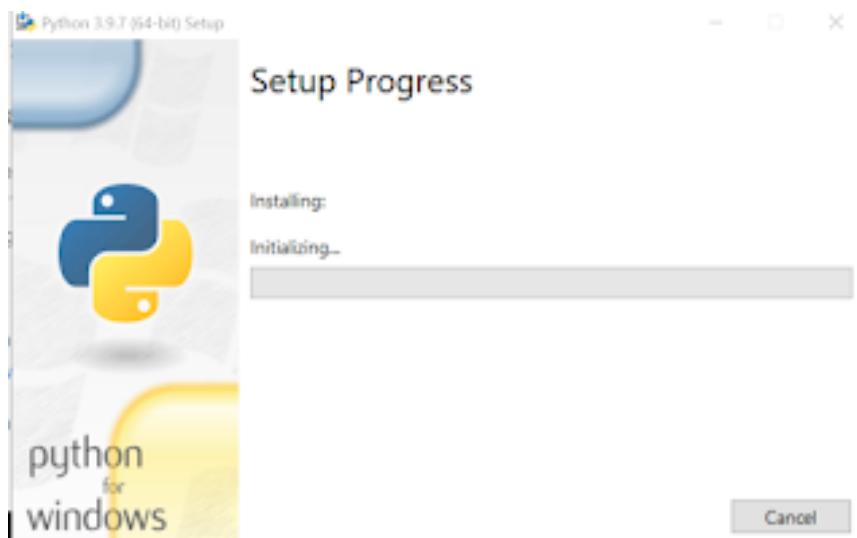
Task 3

Instalasi Python

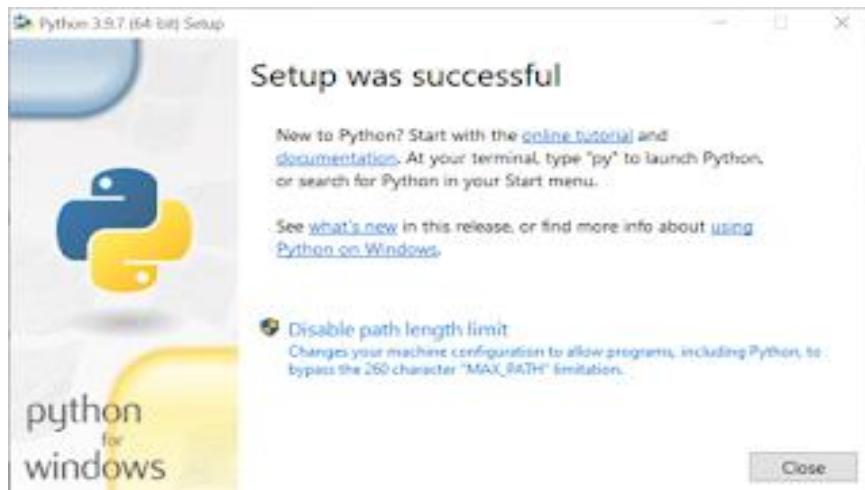
1. Pilih system python yang sesuai dengan system anda disini saya memakai python(3.9.7/64-bit)



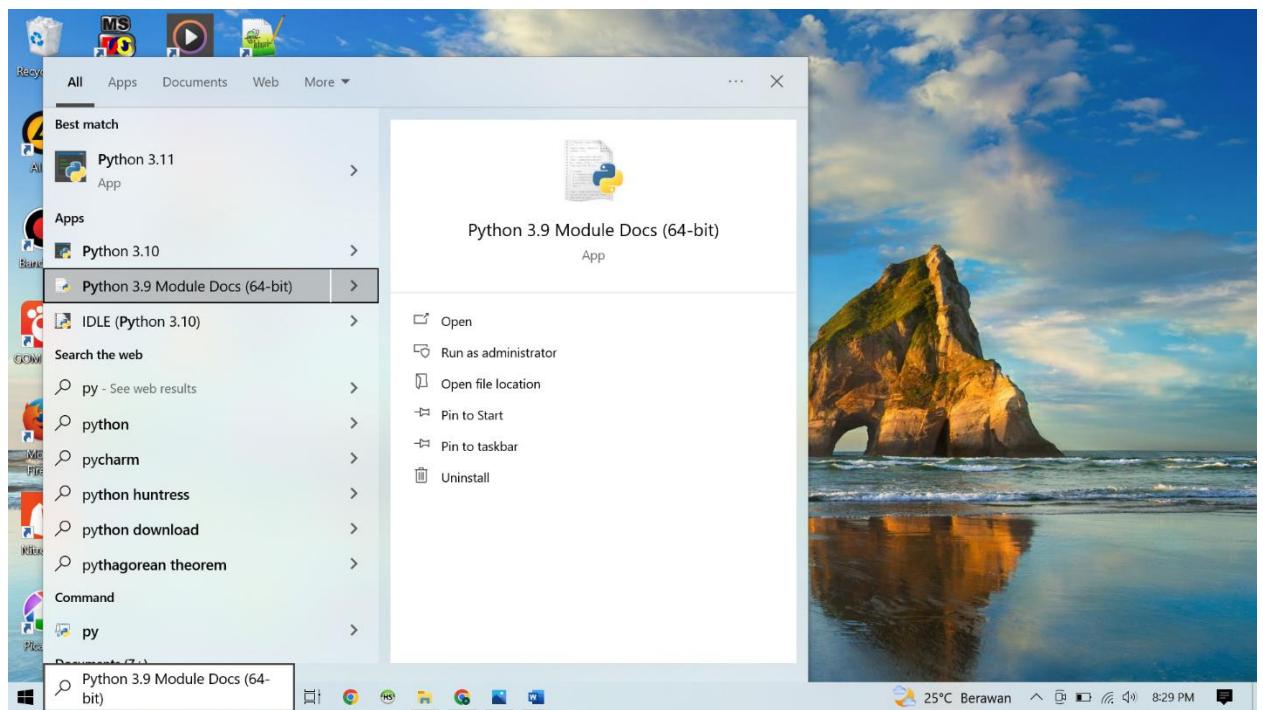
2. Tunggu hingga proses instalasi selesai



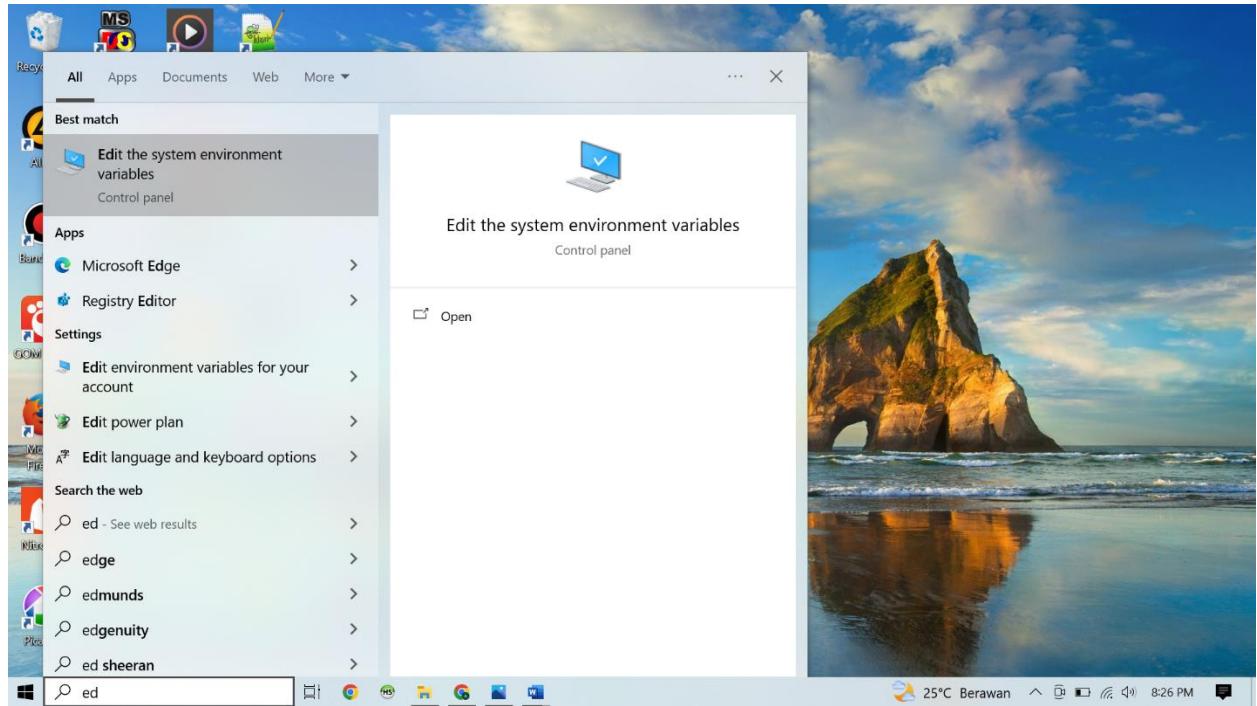
3. Setelah sukses klik Close.



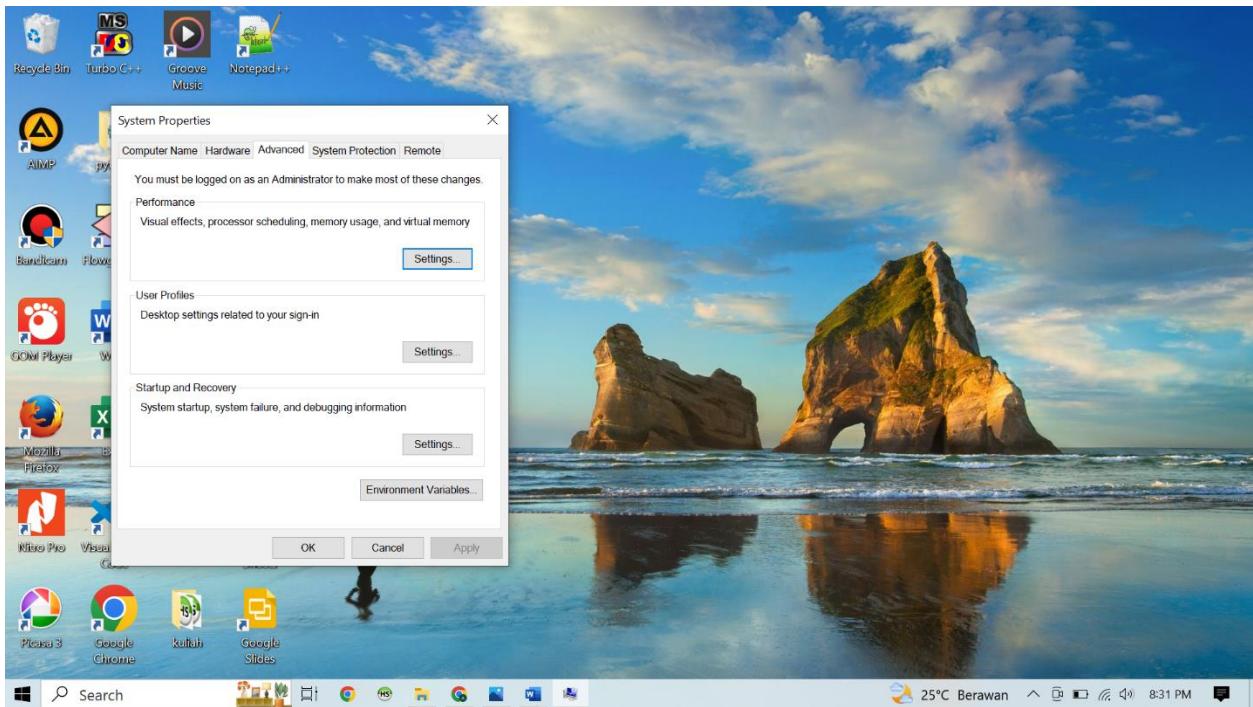
4. Kita bisa mengecek apakah python sudah terinstal atau belum.



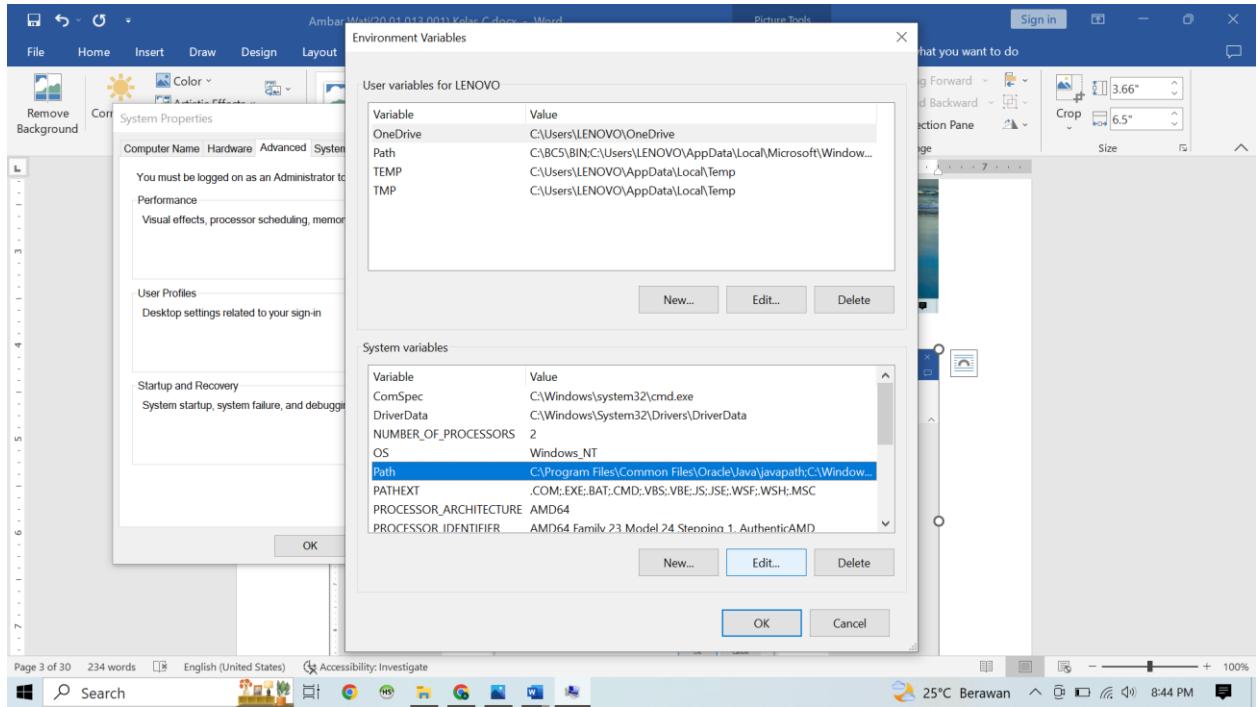
5. Selanjutnya buka sistem **enviroment variabel** untuk mensetting **path**. bisa di cek di menu searching.



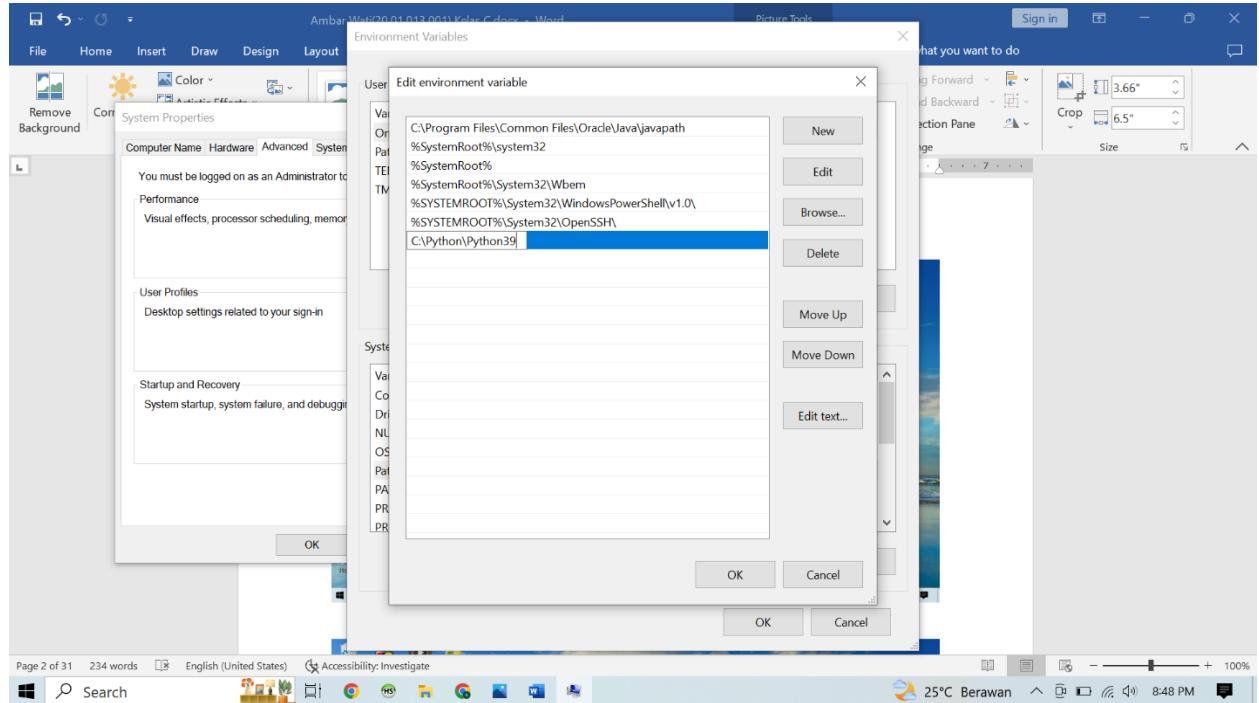
6. Setelah muncul kotak dialog klik **enviroment variabls** seperti gambar di bawah ini.



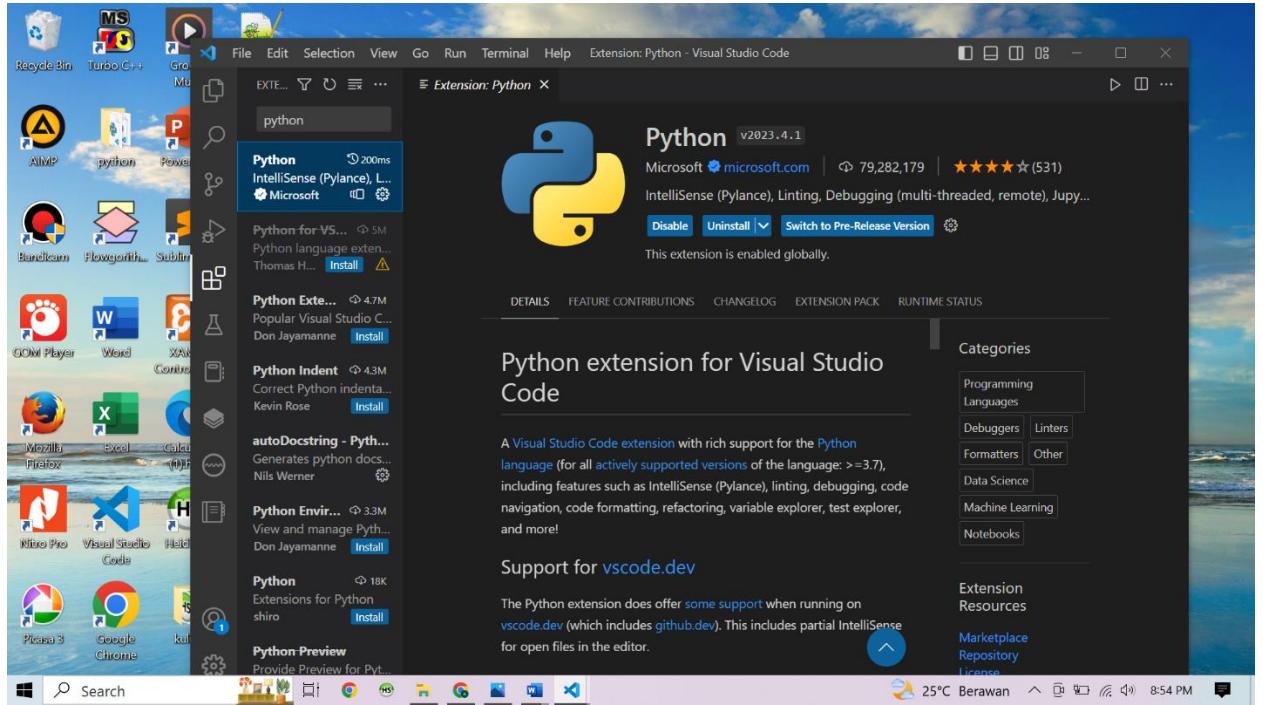
7. Pada bagian system variables path klik edit.



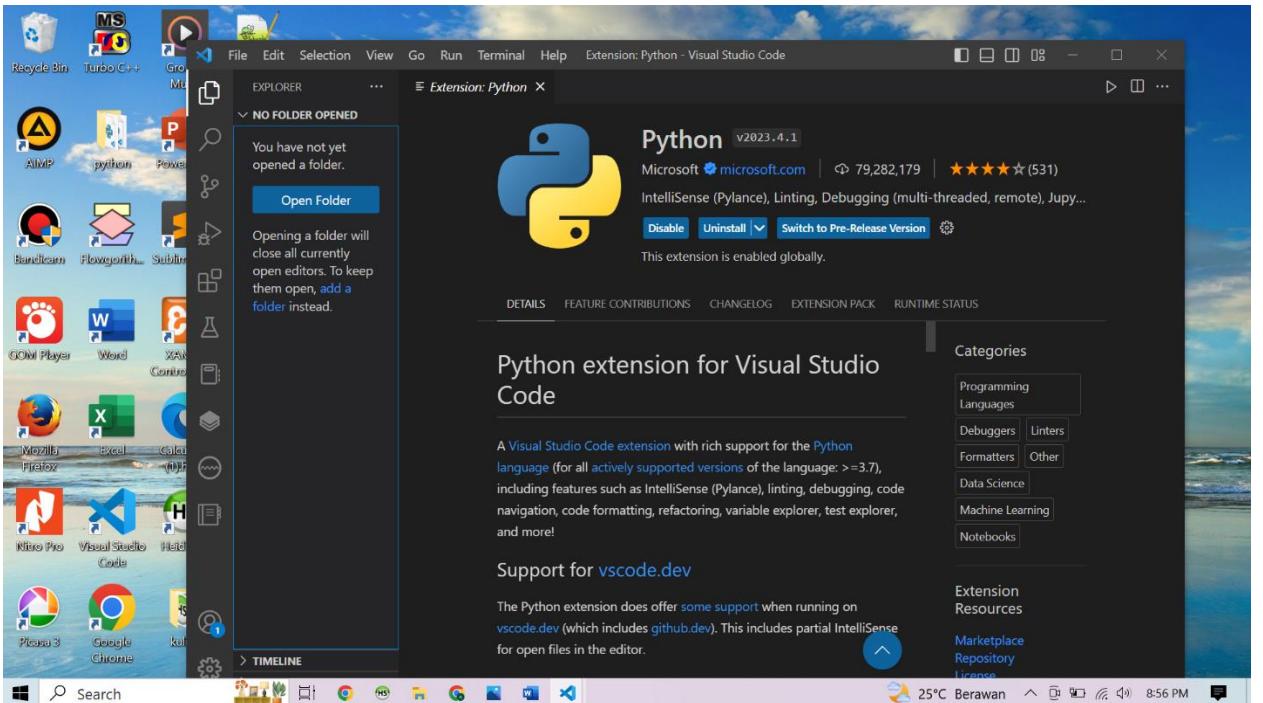
8. Klik tombol new lalu paste alamat directori yang telah di buat atau di copy



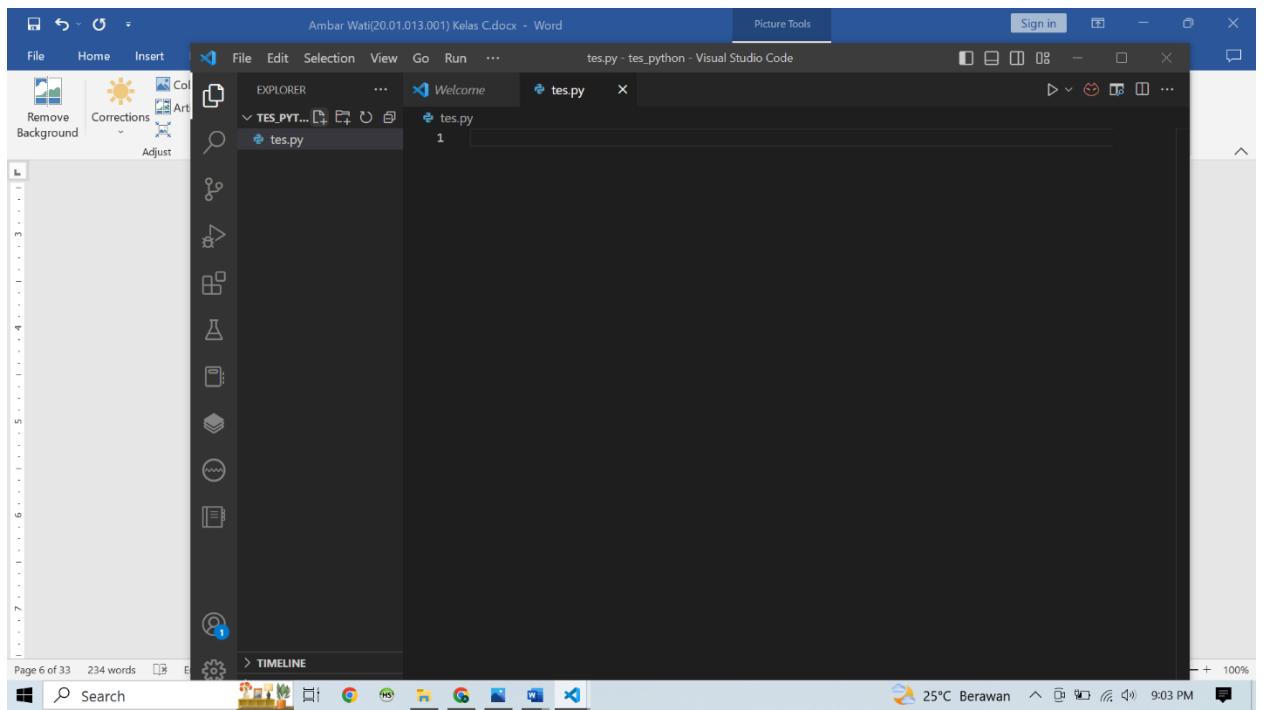
9. Lalu buka vs code pilih menu **extension** lalu searching python kemudian di install.



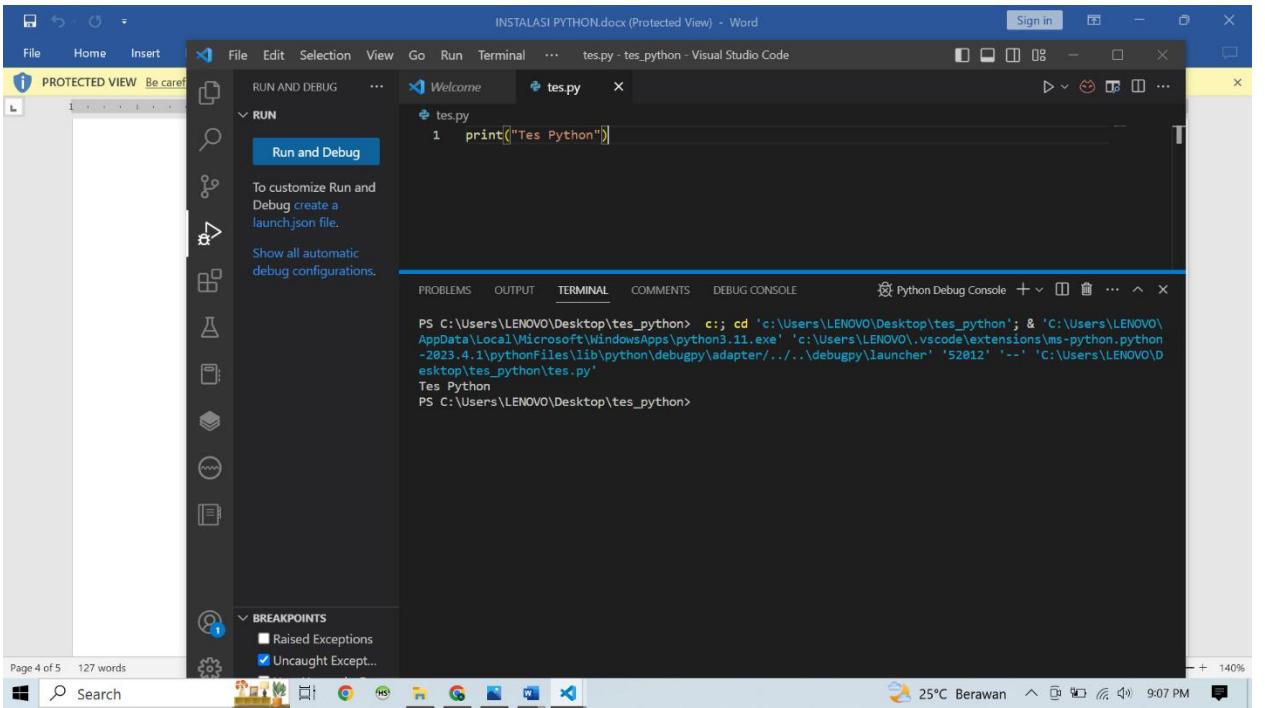
10. Lalu buat folder pada dekstop yang anda mau



11. Pada new file lalu buat folder tes.pyhton



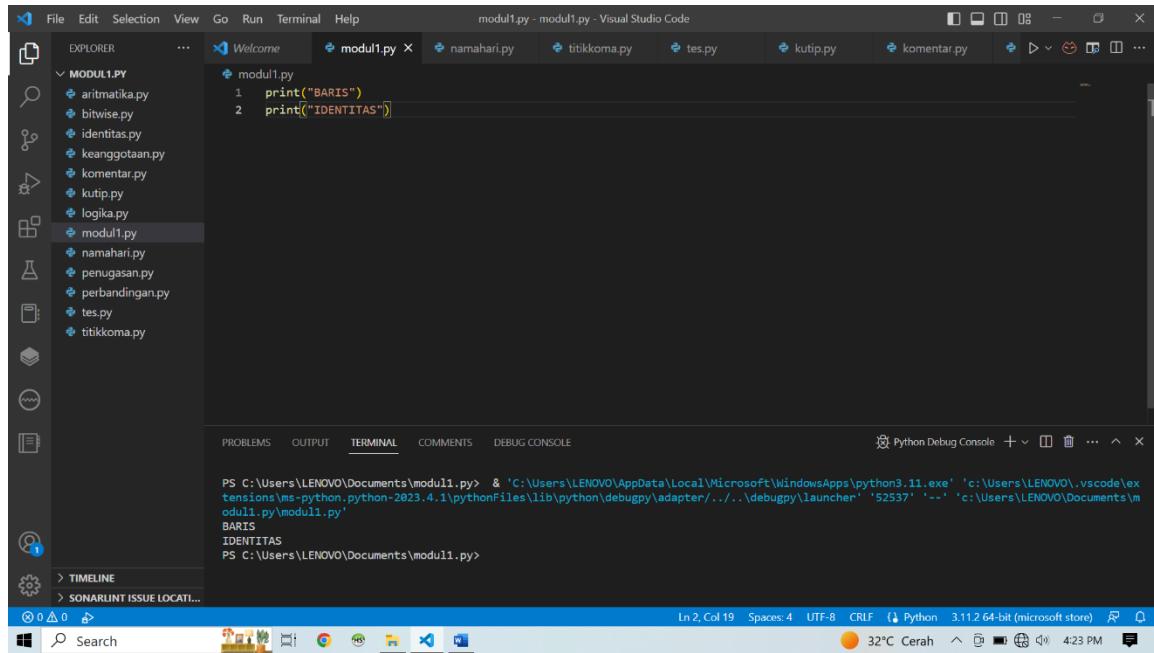
12. lalu run and Debug project seperti pada gambar di bawah ini



Python – Modul 1

1. Baris dan identitas

Blok kode pada python menggunakan tanda identitas (spasi).



```
modul1.py - modul1.py - Visual Studio Code
File Edit Selection View Go Run Terminal Help
MODUL1.PY
  aritmatika.py
  bitwise.py
  identitas.py
  keanggotaan.py
  komentar.py
  kutip.py
  logika.py
  modul1.py
  namahari.py
  penugasan.py
  perbandingan.py
  tes.py
  titikoma.py

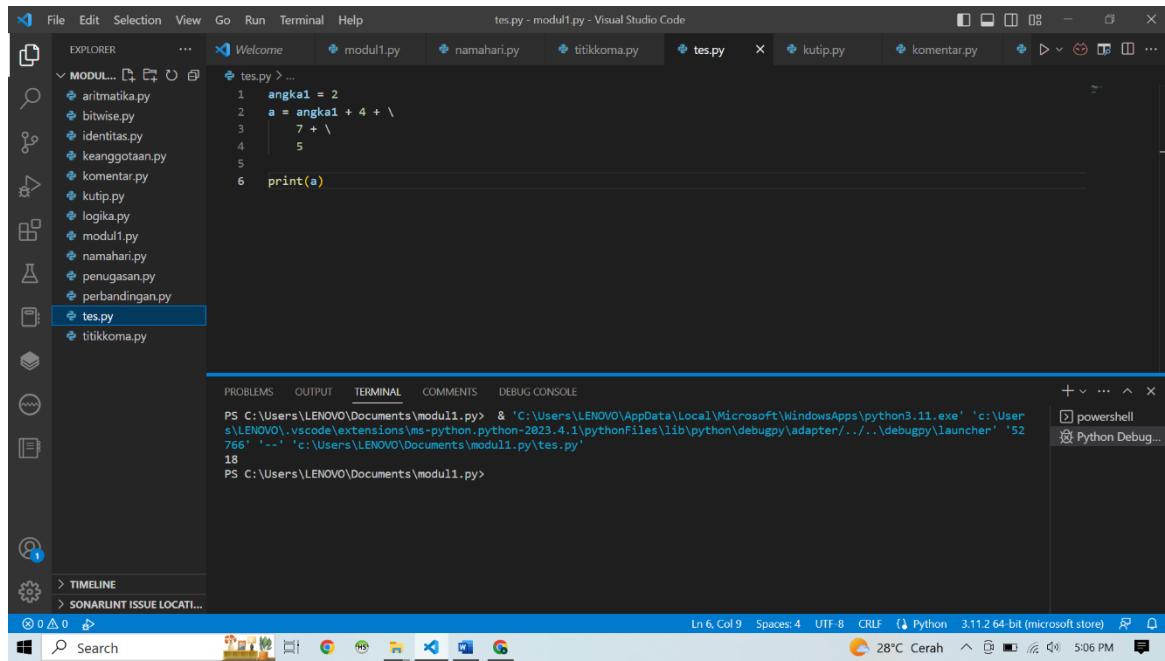
modul1.py
1 print("BARIS")
2 print("IDENTITAS")

PROBLEMS OUTPUT TERMINAL COMMENTS DEBUG CONSOLE
PS C:\Users\LENOVO\Documents\moduli.py & "C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe" "c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher" '52537' '--' 'c:\Users\LENOVO\Documents\modul1.py\modul1.py'
BARIS
IDENTITAS
PS C:\Users\LENOVO\Documents\moduli.py

Ln 2, Col 19 Spaces: 4 UTF-8 CRLF Python 3.11.2 64-bit (microsoft store) 32°C Cerah 4:23 PM
```

2. Pernyataan Multibaris

Pada Python sebuah statement pada akhir dari baris baris menggunakan tanda (/)



```
tes.py - modul1.py - Visual Studio Code
File Edit Selection View Go Run Terminal Help
MODUL1.PY
  aritmatika.py
  bitwise.py
  identitas.py
  keanggotaan.py
  komentar.py
  kutip.py
  logika.py
  modul1.py
  namahari.py
  penugasan.py
  tes.py
  titikoma.py

tes.py > ...
1 angka1 = 2
2 a = angka1 + 4 + \
3     7 + \
4     5
5
6 print(a)

PROBLEMS OUTPUT TERMINAL COMMENTS DEBUG CONSOLE
PS C:\Users\LENOVO\Documents\moduli.py & "C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe" "c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher" '52766' '--' 'c:\Users\LENOVO\Documents\moduli.py\tes.py'
18
PS C:\Users\LENOVO\Documents\moduli.py

Ln 6, Col 9 Spaces: 4 UTF-8 CRLF Python 3.11.2 64-bit (microsoft store) 28°C Cerah 5:06 PM
```

3. Tanda Kutip

Pada python menggunakan tanda kutip tunggal ('), ganda("), triple("")")

The screenshot shows the Visual Studio Code interface. In the Explorer sidebar, there is a folder named 'MODUL1...' containing several Python files: aritmatika.py, bitwise.py, identitas.py, keanggotaan.py, komentar.py, kutip.py, logika.py, modul1.py, namahari.py, penugasan.py, perbandingan.py, tes.py, and titikoma.py. The file 'kutip.py' is selected. The code in 'kutip.py' is:

```
1 kutip1 = 'BELAJAR PYTHON'
2 kutip2 = "BELAJAR PYTHONDASAR"
3 kutip3 = """BELAJAR PYTHON SIANG MALAM"""
4
5 print(kutip1)
6 print(kutip2)
7 print(kutip3)
```

In the terminal tab, the output of running the script is shown:

```
PS C:\Users\LENOVO\Documents\modul1.py> c:; cd 'c:\Users\LENOVO\Documents\modul1.py'; & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52779' '--' 'c:\Users\LENOVO\Documents\modul1.py\kutip.py'
BELAJAR PYTHON
BELAJAR PYTHONDASAR
BELAJAR PYTHON SIANG MALAM
PS C:\Users\LENOVO\Documents\modul1.py>
```

The status bar at the bottom indicates the file is 'Ln 7, Col 13' with 'Spaces: 4' and 'UTF-8' encoding.

4. Komentar

Tanda pagar (#) digunakan untuk menandai komentar python, komentar berguna untuk memudahkan memahami maksud dari kode

The screenshot shows the Visual Studio Code interface. In the Explorer sidebar, there is a folder named 'MODUL1.PY' containing several Python files: aritmatika.py, bitwise.py, identitas.py, keanggotaan.py, komentar.py, kutip.py, logika.py, modul1.py, namahari.py, penugasan.py, perbandingan.py, tes.py, and titikoma.py. The file 'komentar.py' is selected. The code in 'komentar.py' is:

```
1 print("INI ADALAH KOMENTAR") #contoh komentar
```

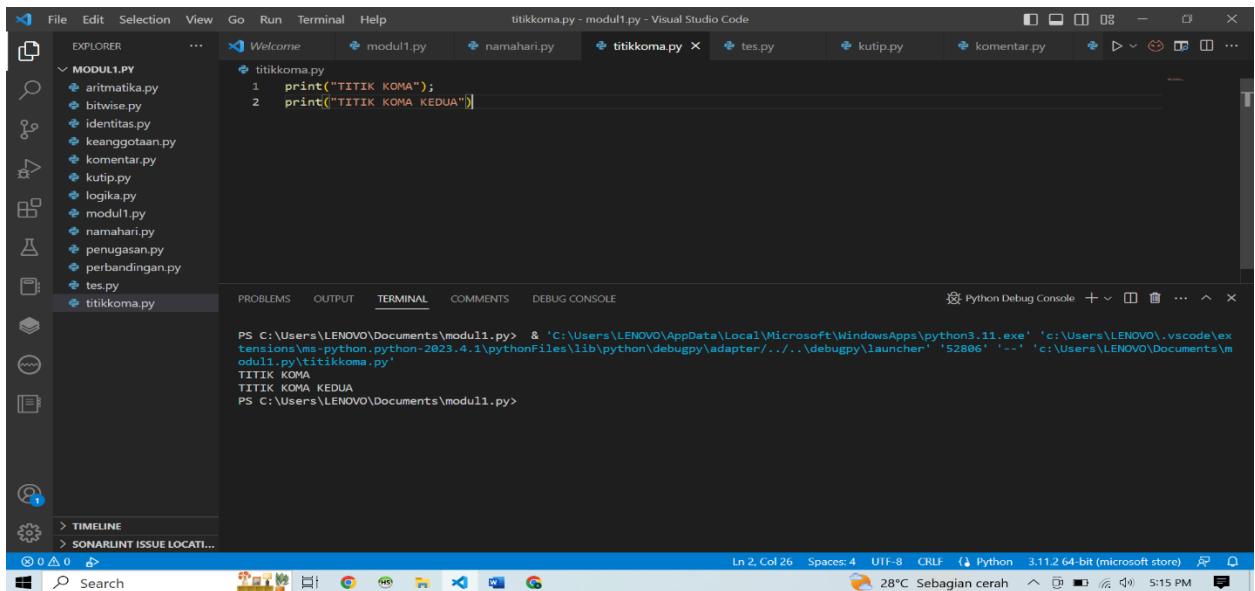
In the terminal tab, the output of running the script is shown:

```
PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52794' '--' 'c:\Users\LENOVO\Documents\modul1.py\komentar.py'
INI ADALAH KOMENTAR
PS C:\Users\LENOVO\Documents\modul1.py>
```

The status bar at the bottom indicates the file is 'Ln 1, Col 46' with 'Spaces: 4' and 'UTF-8' encoding.

5. Dua pernyataan dalam satu baris

Titik koma dapat digunakan ketika terdapat 2 pernyataan dalam 1 baris kode



A screenshot of Visual Studio Code showing a Python file named 'titikkoma.py'. The code contains two print statements:

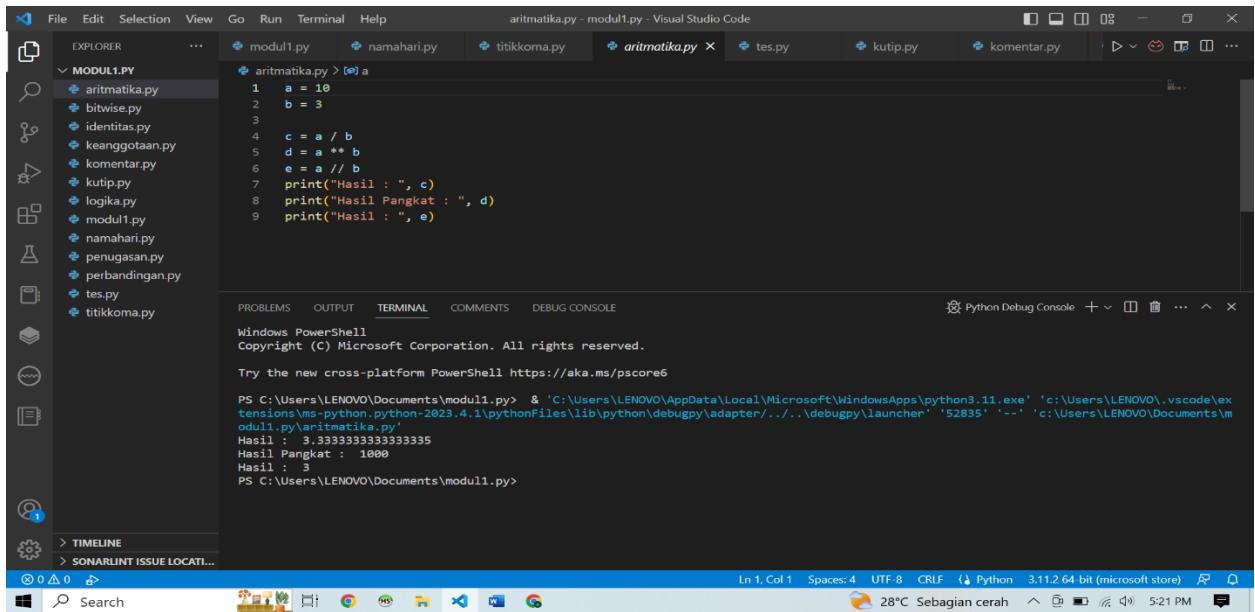
```
titikkoma.py
1 print("TITIK KOMA");
2 print("TITIK KOMA KEDUA")
```

The terminal window shows the output:

```
PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52806' '--' 'c:\Users\LENOVO\Documents\modul1.py\titikkoma.py'
TITIK KOMA
TITIK KOMA KEDUA
PS C:\Users\LENOVO\Documents\modul1.py>
```

6. Operator Aritmatika

Operator Aritmatika digunakan untuk melakukan operasi matematika seperti penjumlahan, pengurangan, perkalian, pembagian, dan lain – lain.



A screenshot of Visual Studio Code showing a Python file named 'aritmatika.py'. The code performs arithmetic operations:

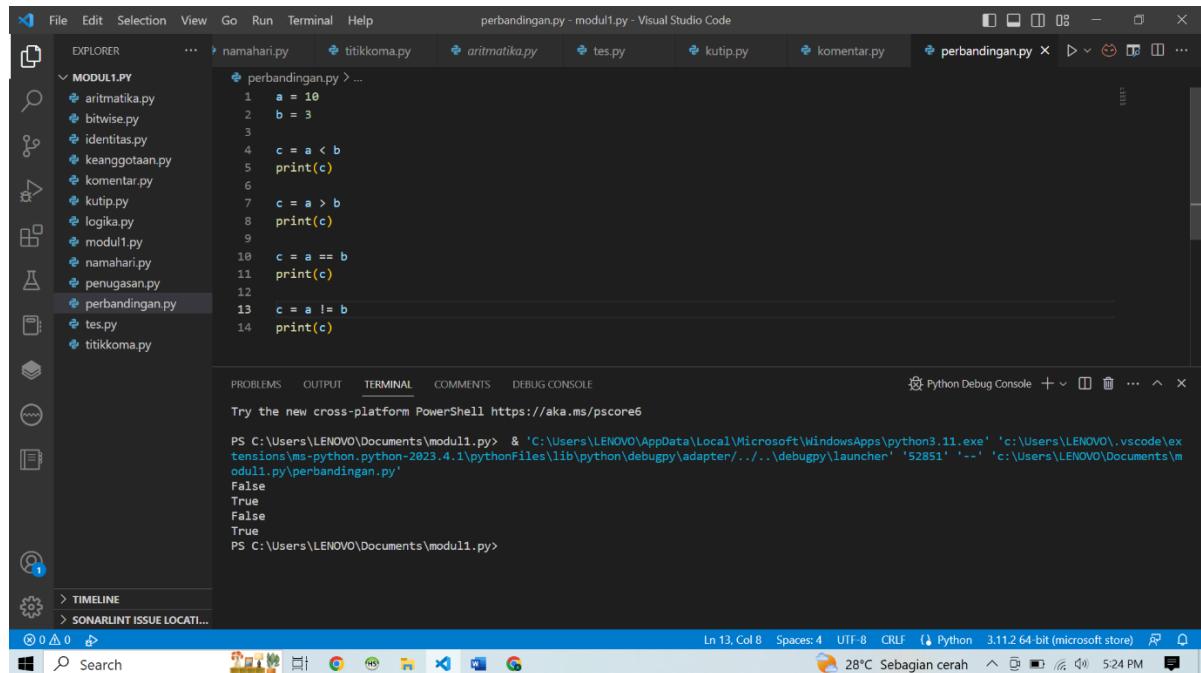
```
aritmatika.py
1 a = 10
2 b = 3
3
4 c = a / b
5 d = a ** b
6 e = a // b
7 print("Hasil : ", c)
8 print("Hasil Pangkat : ", d)
9 print("Hasil : ", e)
```

The terminal window shows the output:

```
PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52835' '--' 'c:\Users\LENOVO\Documents\modul1.py\aritmatika.py'
Hasil :  3.3333333333333335
Hasil Pangkat :  1000
Hasil :  3
PS C:\Users\LENOVO\Documents\modul1.py>
```

7. Operator Perbandingan

Digunakan untuk membandingkan 2 buah nilai. Hasil dari perbandingan yaitu True atau False



The screenshot shows a Visual Studio Code interface with the following details:

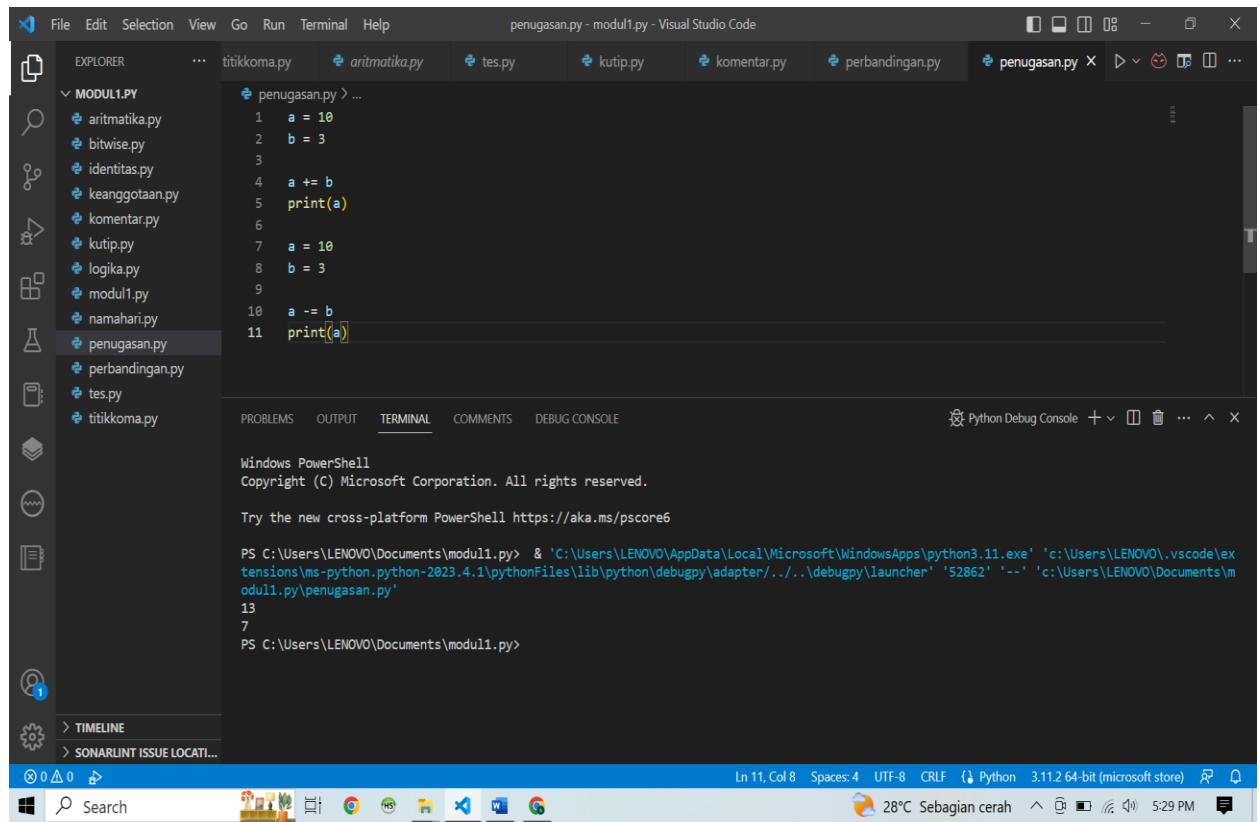
- File Explorer:** Shows a folder named "MODUL1.PY" containing several Python files: aritmatika.py, bitwise.py, identitas.py, keanggotaan.py, komentar.py, kutip.py, logika.py, modul1.py, namahari.py, penugasan.py, perbandingan.py, tes.py, and titikoma.py. The file "perbandingan.py" is currently selected.
- Code Editor:** Displays the content of "perbandingan.py". The code uses comparison operators to assign boolean values to variable "c":

```
a = 10
b = 3
c = a < b
print(c)
c = a > b
print(c)
c = a == b
print(c)
c = a != b
print(c)
```
- Terminal:** Shows the output of running the script:

```
PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52851' '--' 'c:\Users\LENOVO\Documents\modul1.py\perbandingan.py'
False
True
False
True
PS C:\Users\LENOVO\Documents\modul1.py>
```
- Status Bar:** Shows the current line (Ln 13), column (Col 8), spaces (Spaces: 4), encoding (UTF-8), and line endings (CRLF). It also indicates the Python version (Python 3.11.2 64-bit (microsoft store)) and the operating system (Windows 10 Pro).

8. Operator Penugasan

Digunakan untuk memberi nilai ke variable.



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "MODUL1.PY" containing several Python files: aritmatika.py, bitwise.py, identitas.py, keanggotaan.py, komentar.py, kutip.py, logika.py, modul1.py, namahari.py, penugasan.py, perbandingan.py, tes.py, and titikoma.py. The file "penugasan.py" is currently selected and open in the editor.
- Editor:** Displays the following Python code:

```
a = 10
b = 3
a += b
print(a)
a = 10
b = 3
a -= b
print(a)
```
- Terminal:** Shows a Windows PowerShell session output:

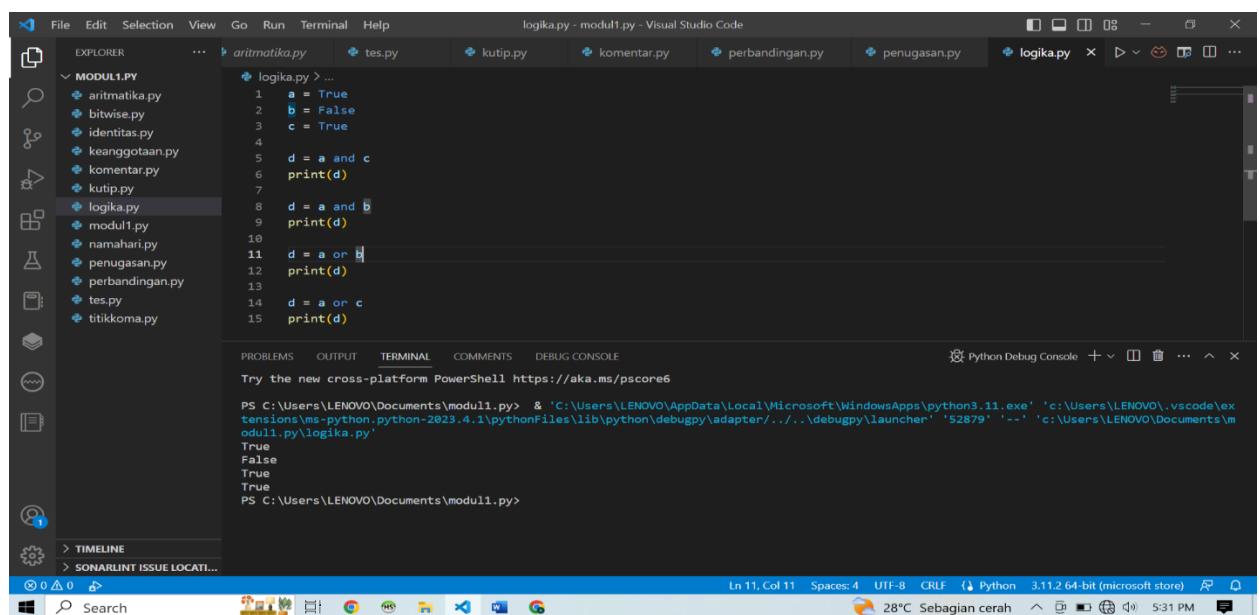
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52862' '--' 'c:\Users\LENOVO\Documents\modul1.py\penugasan.py'
13
7
PS C:\Users\LENOVO\Documents\modul1.py>
```
- Bottom Status Bar:** Shows the Python extension version (3.11.2 64-bit (microsoft store)), the current file (ln 11, col 8), and the system status (28°C Sebagian cerah).

9. Operator Logika

Digunakan untuk melakukan operasi logika.



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "MODUL1.PY" containing several Python files: aritmatika.py, bitwise.py, identitas.py, keanggotaan.py, komentar.py, kutip.py, logika.py, modul1.py, namahari.py, penugasan.py, perbandingan.py, tes.py, and titikoma.py. The file "logika.py" is currently selected and open in the editor.
- Editor:** Displays the following Python code:

```
a = True
b = False
c = True
d = a and c
print(d)
d = a and b
print(d)
d = a or b
print(d)
d = a or c
print(d)
```
- Terminal:** Shows a Windows PowerShell session output:

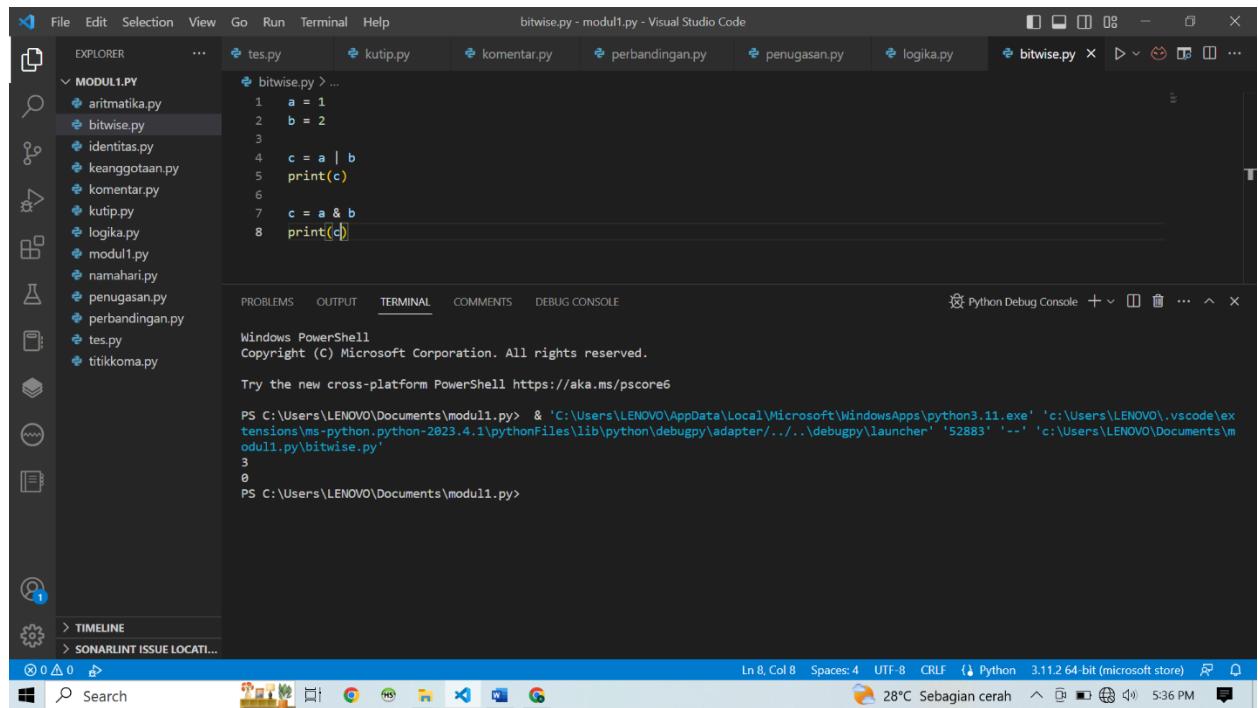
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\modul1.py> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52879' '--' 'c:\Users\LENOVO\Documents\modul1.py\logika.py'
True
False
True
True
True
PS C:\Users\LENOVO\Documents\modul1.py>
```
- Bottom Status Bar:** Shows the Python extension version (3.11.2 64-bit (microsoft store)), the current file (ln 11, col 11), and the system status (28°C Sebagian cerah).

10. Operator Bitwise

Operator yang melakukan operasi bit terhadap operand.

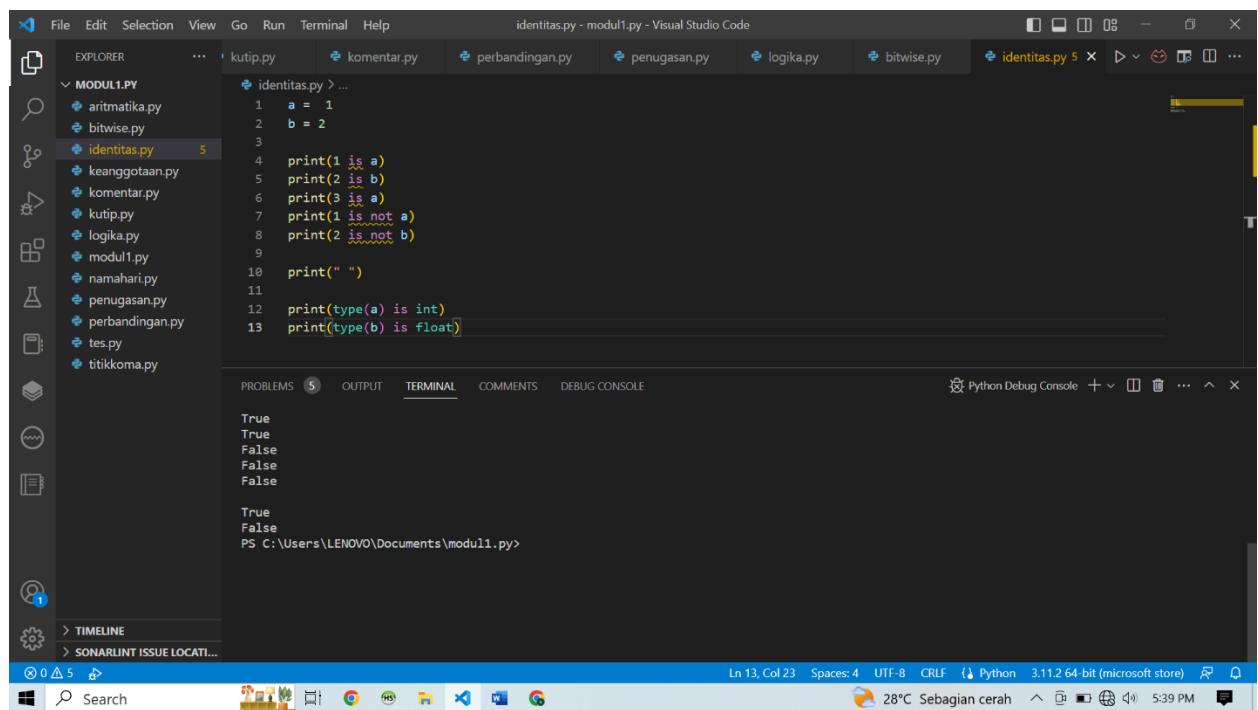


```
a = 1
b = 2
c = a | b
print(c)
c = a & b
print(c)
```

The screenshot shows the Visual Studio Code interface with the 'bitwise.py' file open in the editor. The code uses bitwise OR (|) and AND (&) operators to combine integers a and b. The terminal below shows the execution of the script, resulting in output values of 3 and 0 respectively.

11. Operator Identitas

Operator yang memeriksa apakah dua buah nilai (atau variable) berada pada lokasi memori yang sama.

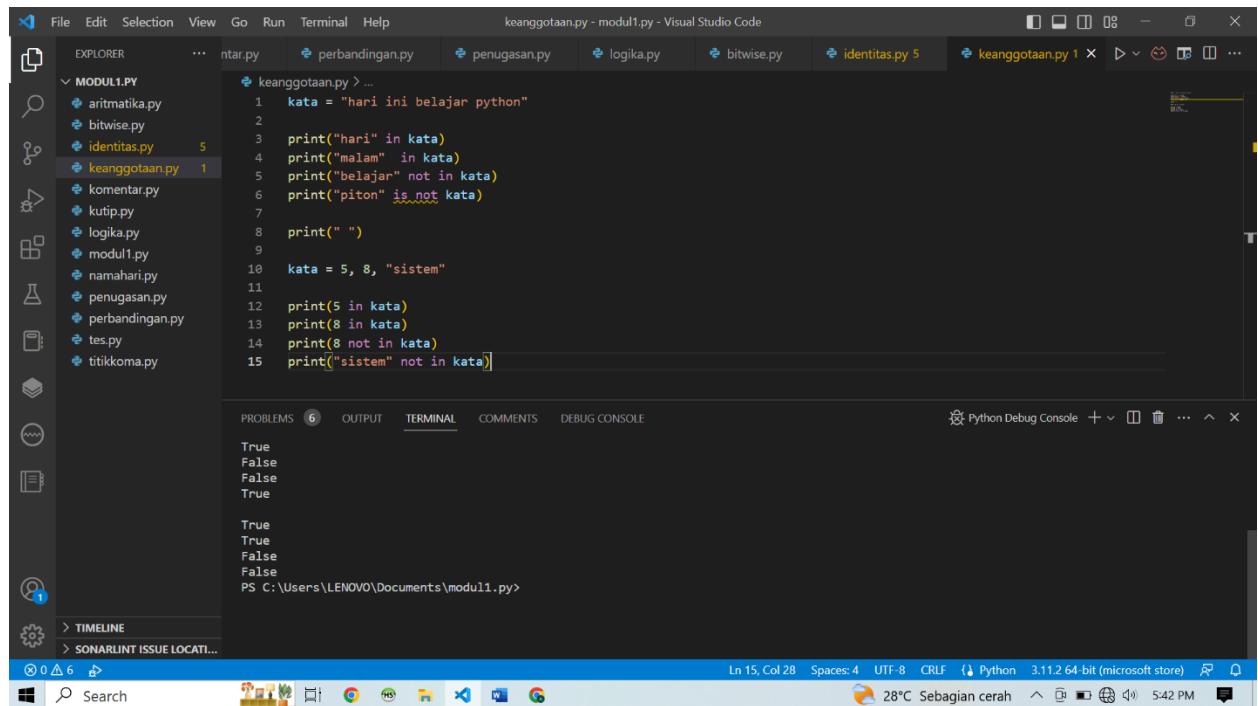


```
a = 1
b = 2
print(1 is a)
print(2 is b)
print(3 is a)
print(1 is not a)
print(2 is not b)
print(" ")
print(type(a) is int)
print(type(b) is float)
```

The screenshot shows the Visual Studio Code interface with the 'identitas.py' file open in the editor. The code uses the 'is' and 'is not' identity operators to compare integer values and their types. The terminal below shows the execution of the script, displaying True, False, and other related output.

12. Operator Keanggotaan

Digunakan untuk memeriksa apakah suatu nilai atau variable merupakan anggota atau ditemukan di dalam suatu data (string, list, tuple, set, dan dictionary)



The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "MODUL1.PY" containing several Python files: aritmatika.py, bitwise.py, identitas.py (5), keanggotaan.py (1), perbandingan.py, penugasan.py, logika.py, komentar.py, kutip.py, namahari.py, and tes.py.
- Code Editor:** Displays the content of the "keanggotaan.py" file. The code uses the "in" operator to check if elements are present in a string "kata".

```
kata = "hari ini belajar python"
print("hari" in kata)
print("malam" in kata)
print("belajar" not in kata)
print("piton" is not kata)

kata = 5, 8, "sistem"
print(5 in kata)
print(8 in kata)
print(8 not in kata)
print("sistem" not in kata)
```
- Terminal:** Shows the output of the Python interpreter:

```
True
False
False
True

True
True
False
False
```
- Status Bar:** Shows the current file path: PS C:\Users\LENOVO\Documents\modul1.py>, line 15, column 28, and other system information like temperature (28°C) and battery status.

Python – Modul 2

1. Output

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing various Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... 2, list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "Output.py". The code contains several print statements:

```
1 print(1, 3, 5, 7)
2 # Outputnya : 1 3 5 7
3
4 print(1,2,3,4, sep='*')
5 # Outputnya : 1*2*3*4
6
7 print(1,2,3,4, sep='#', end=' ')
8 # Outputnya : 1#2#3#4
```
- Terminal:** Shows the command line output of running the script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> c:; cd 'c:\Users\LENOVO\Documents\Python.Modul 2'; & "C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe" 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFile s\lib\python\debugpy\adapter/../debugpy\launcher' '52912' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\Output.py'
1 3 5 7
1*2*3*4
1#2#3#4&
```
- Bottom Status Bar:** Displays "Ln 8, Col 23" and "Python 3.11.2 64-bit (microsoft store)".

2. Input

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing various Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... 2, list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "Input.py". The code uses the input() function to read user input:

```
1 a = input("Masukkan Nilai A : ")
2 b = input("Masukkan Nilai B : ")
3
4 print(a,b) #Kode input
5
6 a = input("Masukkan Nilai A : ")
7 b = input("Masukkan Nilai B : ")
8 c = a+b
9
10 print(c) #kode input integer tanpa fungsi int()
11
12 a = int (input("Masukkan Nilai A : "))
13 b = int (input("Masukkan Nilai B : "))
14 c = a+b
15
16 print(c) #fungsi int() cara pertama
```
- Terminal:** Shows the command line output of running the script:

```
'52921' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\Input.py'
Masukkan Nilai A : 2
Masukkan Nilai B : 1
2 1
Masukkan Nilai A : 2
Masukkan Nilai B : 1
2 1
Masukkan Nilai A : 2
Masukkan Nilai B : 1
3
Masukkan Nilai A : 2
Masukkan Nilai B : 1
3
```
- Bottom Status Bar:** Displays "Ln 19, Col 36" and "Python 3.11.2 64-bit (microsoft store)".

3. Input Float

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... 2, list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "Input_float.py" with the following code:

```
a = input("Masukkan Nilai A : ")
b = input("Masukkan Nilai B : ")
c=float(a) + float(b)
print(c) #Fungsi float()
```
- Terminal:** Displays the command-line output of running the script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> c:; cd 'c:\Users\LENOVO\Documents\Python.Modul 2'; & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52926' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\Input_float.py'
Masukkan Nilai A : 2
Masukkan Nilai B : 3
5.0
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Bottom Status Bar:** Shows the current file is "Input_float.py", the line number is Ln 2, column is Col 30, spaces are 4, encoding is UTF-8, and the Python version is 3.11.2 64-bit (microsoft store). It also shows the date and time as 28°C Sebagian cerah 5:54 PM.

4. Input abs

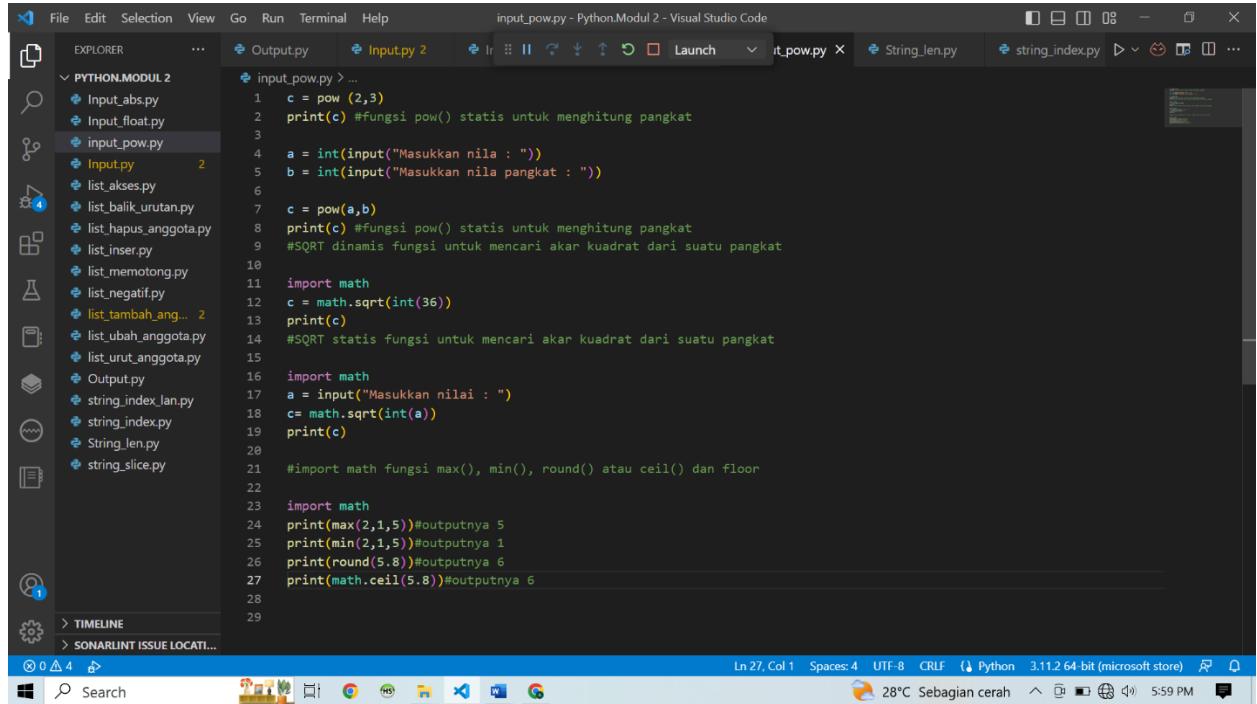
The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... 2, list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "Input_abs.py" with the following code:

```
a = -5
c = abs(a)
print(c) #fungsi abs() dinamis untuk menghilangkan tipe data yang ada minusnya
a = int(input("Masukkan nilai A : "))
c = abs(a)
print(c) #fungsi abs() statis untuk menghilangkan tipe data yang ada minusnya
c = pow(2,3)
print(c) #fungsi pow() statis untuk menghitung pangkat
a = int(input("Masukkan nilai : "))
b = int(input("Masukkan nilai pangkat : "))
c = pow(a,b)
print(c) #fungsi pow() statis untuk menghitung pangkat
```
- Terminal:** Displays the command-line output of running the script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52938' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\Input_abs.py'
5
Masukkan nilai A : 10
Masukkan nilai pangkat : 2
100
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Bottom Status Bar:** Shows the current file is "Input_abs.py", the line number is Ln 1, column is Col 6, spaces are 4, encoding is UTF-8, and the Python version is 3.11.2 64-bit (microsoft store). It also shows the date and time as 28°C Sebagian cerah 5:57 PM.

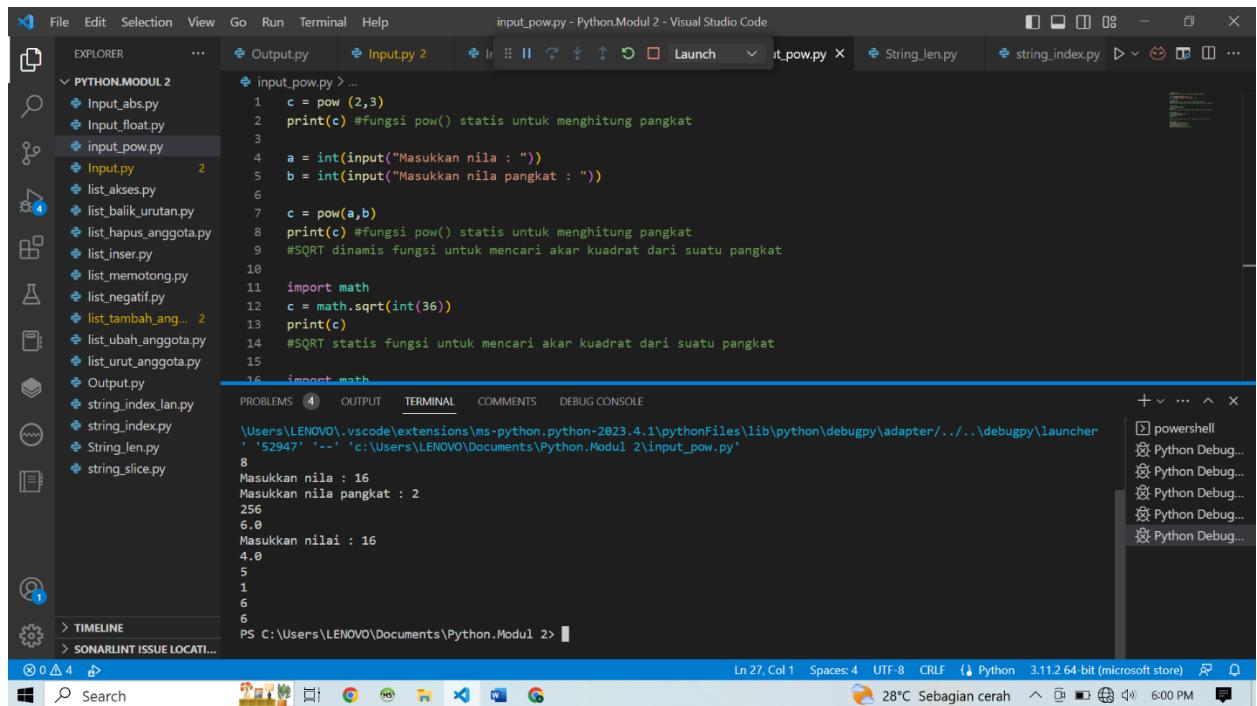
5. Input Fungsi Pow



The screenshot shows the Visual Studio Code interface with the file `input_pow.py` open in the editor. The code uses the `pow` function to calculate powers and the `sqrt` function from the `math` module to find square roots. It also demonstrates the use of `max`, `min`, `round`, `ceil`, and `floor` functions.

```
1 c = pow(2,3)
2 print(c) #fungsi pow() statis untuk menghitung pangkat
3
4 a = int(input("Masukkan nilai : "))
5 b = int(input("Masukkan nilai pangkat : "))
6
7 c = pow(a,b)
8 print(c) #fungsi pow() statis untuk menghitung pangkat
9 #SQRT dinamis fungsi untuk mencari akar kuadrat dari suatu pangkat
10
11 import math
12 c = math.sqrt(int(36))
13 print(c)
14 #SQRT statis fungsi untuk mencari akar kuadrat dari suatu pangkat
15
16 import math
17 a = input("Masukkan nilai : ")
18 c= math.sqrt(int(a))
19 print(c)
20
21 #import math fungsi max(), min(), round() atau ceil() dan floor
22
23 import math
24 print(max(2,1,5))#outputnya 5
25 print(min(2,1,5))#outputnya 1
26 print(round(5.8))#outputnya 6
27 print(math.ceil(5.8))#outputnya 6
28
29
```

Output :



The screenshot shows the Visual Studio Code interface with the terminal tab active, displaying the execution of `input_pow.py`. The user inputs values for `a` and `b`, and the program outputs the result of `pow(a, b)`.

```
1 c = pow(2,3)
2 print(c) #fungsi pow() statis untuk menghitung pangkat
3
4 a = int(input("Masukkan nilai : "))
5 b = int(input("Masukkan nilai pangkat : "))
6
7 c = pow(a,b)
8 print(c) #fungsi pow() statis untuk menghitung pangkat
9 #SQRT dinamis fungsi untuk mencari akar kuadrat dari suatu pangkat
10
11 import math
12 c = math.sqrt(int(36))
13 print(c)
14 #SQRT statis fungsi untuk mencari akar kuadrat dari suatu pangkat
15
16 import math
17 a = input("Masukkan nilai : ")
18 c= math.sqrt(int(a))
19 print(c)
20
21 #import math fungsi max(), min(), round() atau ceil() dan floor
22
23 import math
24 print(max(2,1,5))#outputnya 5
25 print(min(2,1,5))#outputnya 1
26 print(round(5.8))#outputnya 6
27 print(math.ceil(5.8))#outputnya 6
28
29
```

Masukkan nilai : 16
Masukkan nilai pangkat : 2
256
6.0
Masukkan nilai : 16
4.0
5
1
6
6

6. Operator String

a. Strng Fungsi Len

The screenshot shows a Microsoft Visual Studio Code interface with the following details:

- File Explorer (Left):** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, Input_pow.py, Input.py (with a count of 2), list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... (with a count of 2), list_ubah_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py (selected), and string_slice.py.
- Code Editor (Top Center):** Displays the content of "String_len.py".

```
string1 = "Hello world"
print(len(string1)) #fungsi len
```
- Terminal (Bottom Left):** Shows the command-line output.

```
PS C:\Users\LENOVO\Documents\Python.Modul.2> c: & cd 'c:\Users\LENOVO\Documents\Python.Modul.2'; & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\.vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '52953' --- 'c:\Users\LENOVO\Documents\Python.Modul.2\String_lan.py'
11
PS C:\Users\LENOVO\Documents\Python.Modul.2>
```
- Activity Bar (Bottom Right):** Includes icons for Timeline, SonarLINT Issue Location, and a search bar.
- System Taskbar (Bottom):** Shows icons for File Explorer, Task View, Start, Search, and other pinned applications like FileZilla, Google Chrome, and Microsoft Edge.

b. String Fungsi Index

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer (Left):** Shows a tree view of files in the "PYTHON. MODUL 2" folder, including "Output.py", "Input.py" (with a count of 2), "string_index.py", "Input_abs.py", "Input_float.py", "Input_pow.py", "list_alkes.py", "list_balik_urutinan.py", "list_hapus_anggota.py", "list_inser.py", "list_memotong.py", "list_negatif.py", "list_tambah_ang... 2", "list_ubah_anggota.py", "list_urut_anggota.py", and "string_index_lan.py".
- Terminal (Bottom):** Displays the command-line output of running the "string_index.py" script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\documents\Python.Modul 2\string_index.py'
5
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar (Bottom):** Shows file path "Ln 2, Col 20", editor settings "Spaces: 4", encoding "UTF-8", and language "Python 3.11.2 64-bit (microsoft store)".

c. Range Slice

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... (partially visible), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "string_slice.py". The code contains:

```
kata = "Hello word"
print(kata[3:6])
print(kata[7:]) #fungsi slice
```
- Terminal:** The terminal window shows the output of running the script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52966' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\string_slice.py'
Hello
word
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar:** Shows "Ln 3, Col 1" and "Python 3.11.2 64-bit (microsoft store)".

7. List

a. Mengakses Anggota List

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py, list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py, list_tambah_ang... (partially visible), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** The active file is "list_akses.py". The code contains:

```
#output: Python
print(my_list[2])

#list dalam list
your_list=["hallo",[1,2,3],"python"]

#output: 1
print(your_list[1][0])

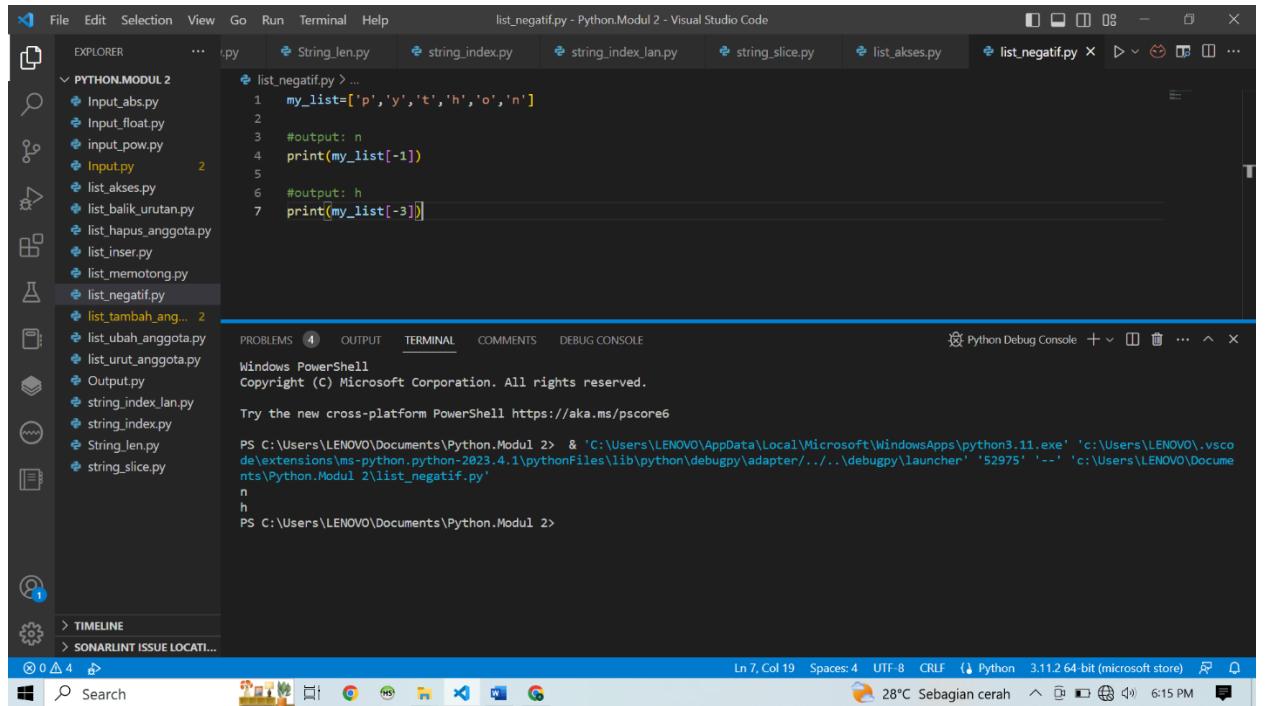
#output: 3
print(your_list[1][2])

#output: hallo
print(your_list[0])

# IndexError
#my_list[4]
```
- Terminal:** The terminal window shows the output of running the script:

```
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52971' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_akses.py'
Saya
Python
1
3
hallo
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar:** Shows "Ln 21, Col 11" and "Python 3.11.2 64-bit (microsoft store)".

b. List dengan Indeks Negatif



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py (marked with a red exclamation), list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_inser.py, list_memotong.py, list_negatif.py (selected), list_tambah_ang... (marked with a red exclamation), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** Displays the content of list_negatif.py:

```
list_negatif.py > ...
1 my_list=['p','y','t','h','o','n']
2
3 #output: n
4 print(my_list[-1])
5
6 #output: h
7 print(my_list[-3])
```
- Terminal:** Shows the output of running the script in PowerShell:

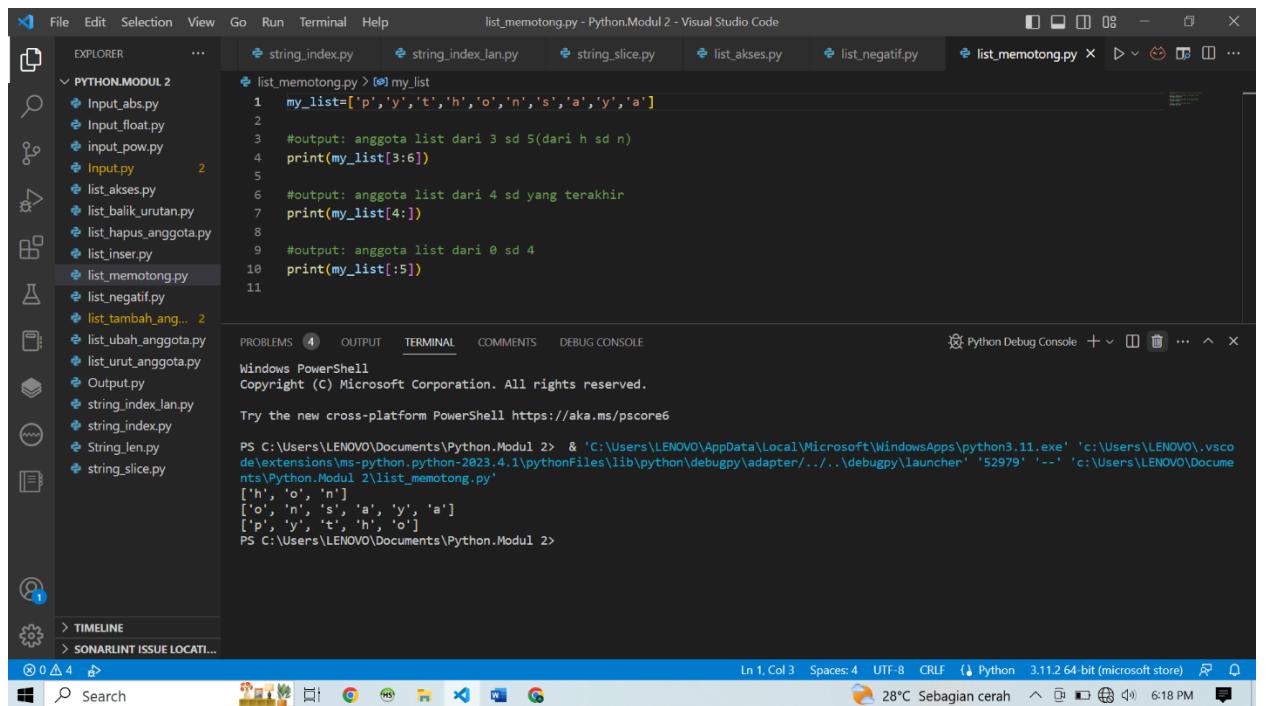
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52979' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_negatif.py'
n
h

PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar:** Shows the current line (Ln 7, Col 19), spaces (Spaces: 4), encoding (UTF-8), and Python version (3.11.2 64-bit (microsoft store)).

c. Memotong (Slicing) List



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: string_index.py, string_index_lan.py, string_slice.py, list_akses.py, list_negatif.py, list_tambah_ang... (marked with a red exclamation), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py. The file list_memotong.py is selected.
- Code Editor:** Displays the content of list_memotong.py:

```
list_memotong.py > my_list
1 my_list=['p','y','t','h','o','n','s','a','y','a']
2
3 #output: anggota list dari 3 sd 5(dari h sd n)
4 print(my_list[3:6])
5
6 #output: anggota list dari 4 sd yang terakhir
7 print(my_list[4:])
8
9 #output: anggota list dari 0 sd 4
10 print(my_list[:5])
11
```
- Terminal:** Shows the output of running the script in PowerShell:

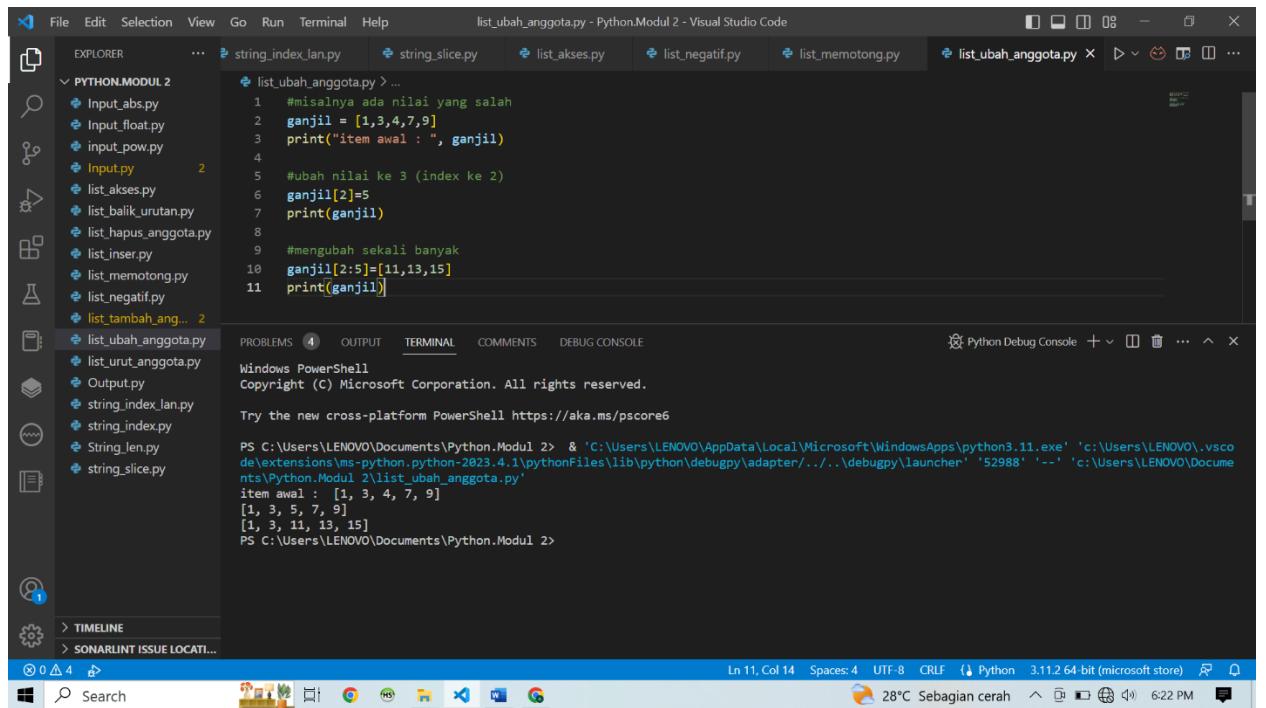
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52979' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_memotong.py'
['h', 'o', 'n']
['o', 'n', 's', 'a', 'y', 'a']
['p', 'y', 't', 'h', 'o']

PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar:** Shows the current line (Ln 1, Col 3), spaces (Spaces: 4), encoding (UTF-8), and Python version (3.11.2 64-bit (microsoft store)).

d. Mengubah Anggota List



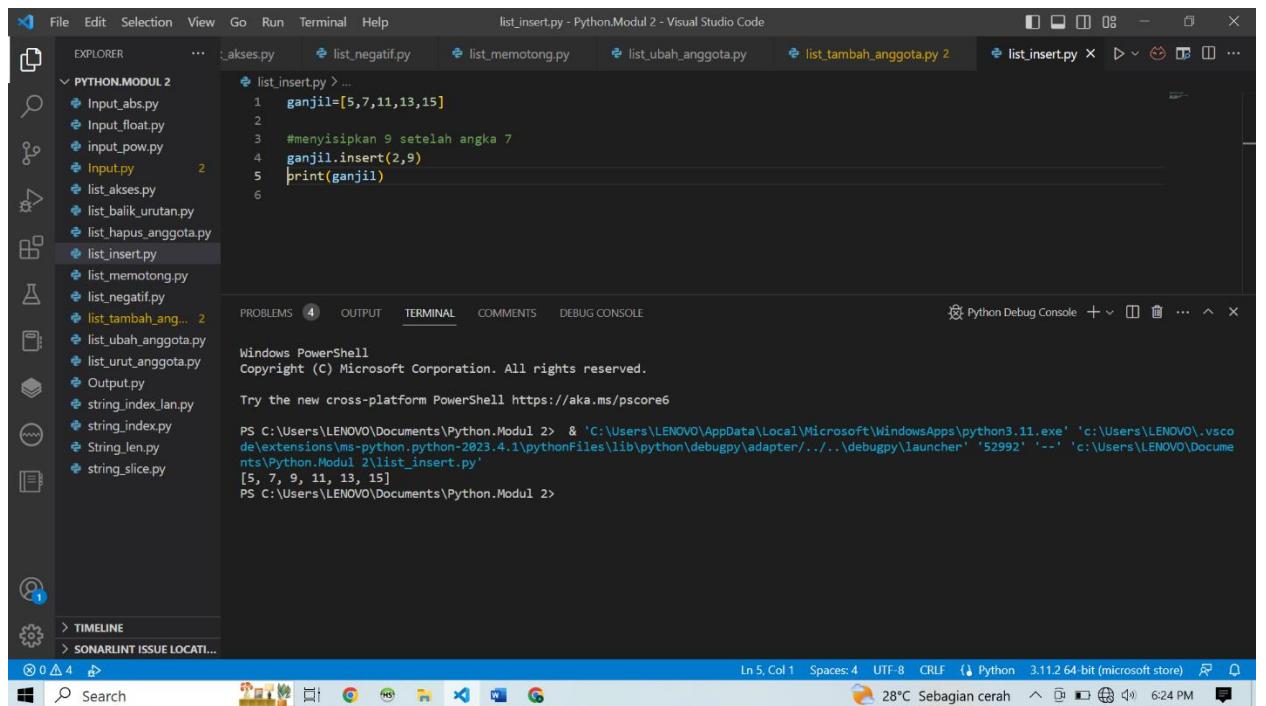
The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Editor:** The active file is `list_ubah_anggota.py`. The code changes the value at index 2 of a list of odd numbers from 5 to 13.

```
list_ubah_anggota.py - Python.Modul 2 - Visual Studio Code
EXPLORER
PYTHON. MODULE 2
Input_abs.py
Input_float.py
input_pow.py
Input.py
list_akses.py
list_balik_urutan.py
list_hapus_anggota.py
list_inser.py
list_memotong.py
list_negatif.py
list_tambah_ang... 2
list_ubah_anggota.py
list_urut_anggota.py
Output.py
string_index_lan.py
string_index.py
String_len.py
string_slice.py
PROBLEMS 4
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52988' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_ubah_anggota.py'
item awal : [1, 3, 4, 7, 9]
[1, 3, 5, 7, 9]
[1, 3, 11, 13, 15]
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```

- Terminal:** Shows the command run in PowerShell to execute the script.
- Bottom Status Bar:** Ln 11, Col 14, Spaces: 4, UTF-8, CRLF, Python 3.11.2 64-bit (microsoft store), 28°C Sebagian cerah, 6:22 PM.

e. Menyisipkan Anggota List



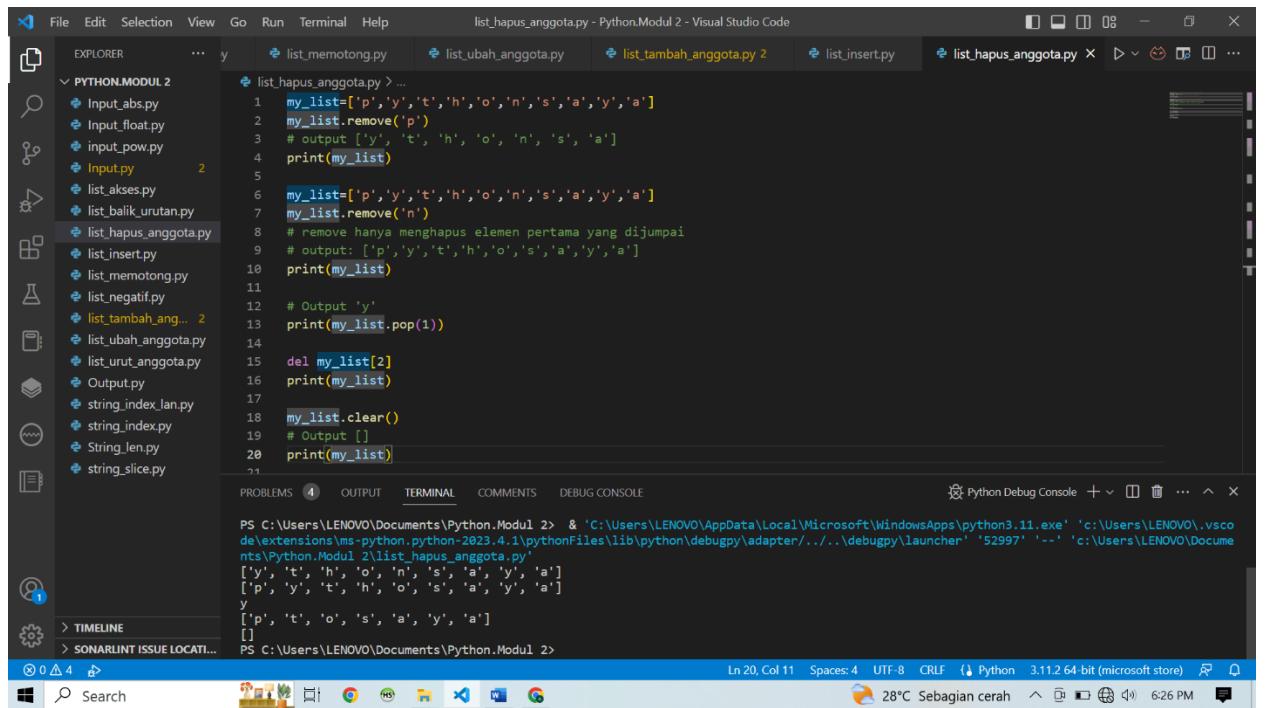
The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Editor:** The active file is `list_insert.py`. The code inserts the value 9 at index 2 of a list of odd numbers.

```
list_insert.py - Python.Modul 2 - Visual Studio Code
EXPLORER
PYTHON. MODULE 2
Input_abs.py
Input_float.py
input_pow.py
Input.py
list_akses.py
list_balik_urutan.py
list_hapus_anggota.py
list_inser.py
list_memotong.py
list_negatif.py
list_tambah_ang... 2
list_ubah_anggota.py
list_urut_anggota.py
Output.py
string_index_lan.py
string_index.py
String_len.py
string_slice.py
PROBLEMS 4
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52992' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_insert.py'
[5, 7, 11, 13, 15]
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```

- Terminal:** Shows the command run in PowerShell to execute the script.
- Bottom Status Bar:** Ln 5, Col 1, Spaces: 4, UTF-8, CRLF, Python 3.11.2 64-bit (microsoft store), 28°C Sebagian cerah, 6:24 PM.

f. Menghapus Anggota List

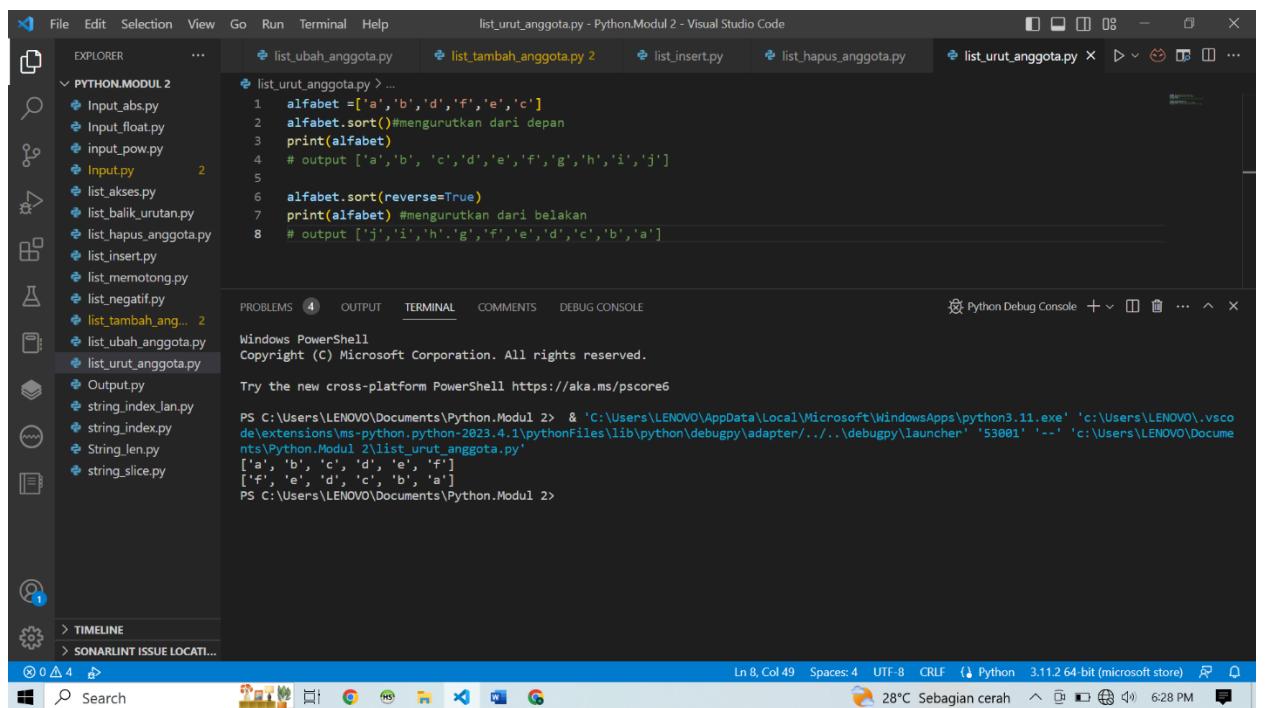


The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py (marked with a 2), list_akses.py, list_balik_urutan.py, list_hapus_anggota.py (selected), list_insert.py, list_memotong.py, list_negatif.py, list_tambah_ang... (marked with a 2), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** Displays the content of list_hapus_anggota.py:

```
list_hapus_anggota.py > ...
1 my_list=['p','y','t','h','o','n','s','a','y','a']
2 my_list.remove('p')
3 # output ['y', 't', 'h', 'o', 'n', 's', 'a', 'y', 'a']
4 print(my_list)
5
6 my_list=['p','y','t','h','o','n','s','a','y','a']
7 my_list.remove('n')
8 # remove hanya menghapus elemen pertama yang dijumpai
9 # output: ['p', 'y', 't', 'h', 'o', 's', 'a', 'y', 'a']
10 print(my_list)
11
12 # Output 'y'
13 print(my_list.pop(1))
14
15 del my_list[2]
16 print(my_list)
17
18 my_list.clear()
19 # Output []
20 print(my_list)
```
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '52997' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_hapus_anggota.py'. The output shows the list being modified at each step.
- Status Bar:** Shows "Ln 20, Col 11" and "PS C:\Users\LENOVO\Documents\Python.Modul 2>".

g. Mengurutkan Anggota List

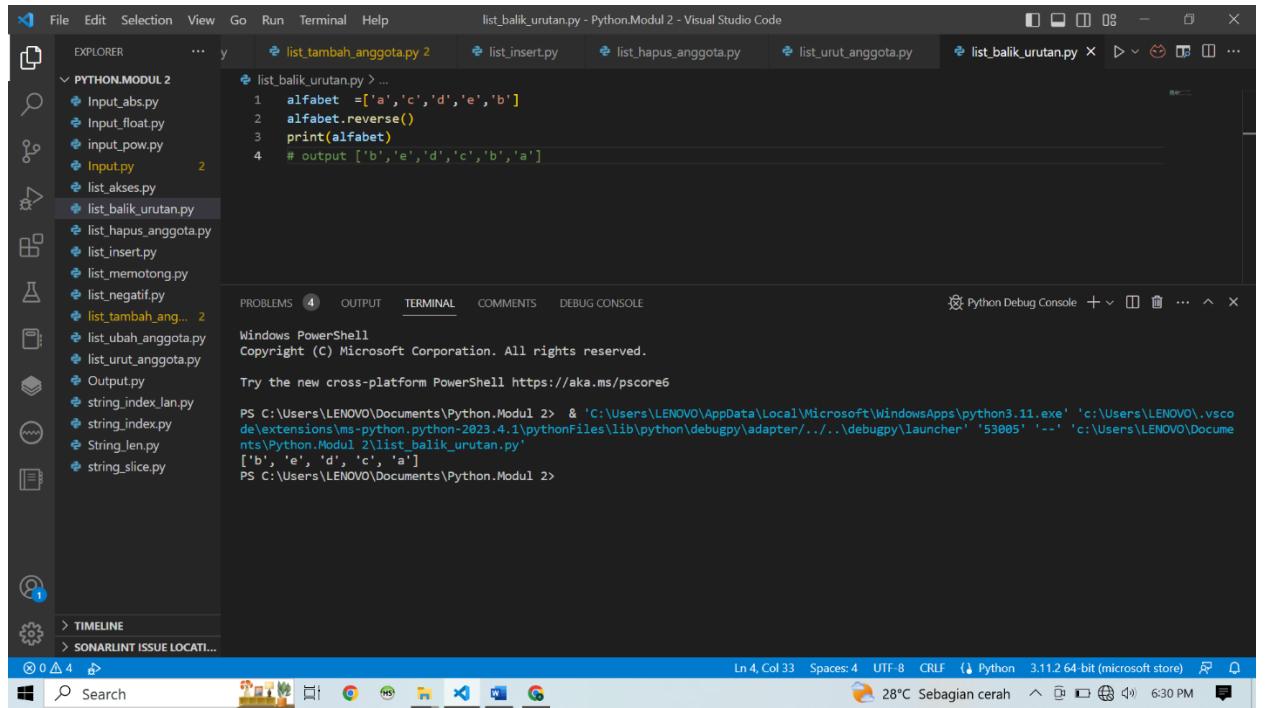


The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON.MODUL 2" containing several Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py (marked with a 2), list_akses.py, list_balik_urutan.py, list_hapus_anggota.py, list_insert.py, list_memotong.py, list_negatif.py, list_tambah_ang... (marked with a 2), list_ubah_anggota.py, list_urut_anggota.py (selected), Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** Displays the content of list_urut_anggota.py:

```
list_urut_anggota.py > ...
1 alfabet =['a','b','d','f','e','c']
2 alfabet.sort()#mengurutkan dari depan
3 print(alfabet)
4 # output ['a','b','c','d','e','f','g','h','i','j']
5
6 alfabet.sort(reverse=True)
7 print(alfabet) #mengurutkan dari belakang
8 # output ['j','i','h','g','f','e','d','c','b','a']
```
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53001' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_urut_anggota.py'. The output shows the sorted lists for both ascending and descending orders.
- Status Bar:** Shows "Ln 8, Col 49" and "PS C:\Users\LENOVO\Documents\Python.Modul 2>".

h. Membalik Anggota List



The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** list_balik_urutan.py - Python.Modul 2 - Visual Studio Code.
- Explorer:** Shows a folder named "PYTHON.MODUL 2" containing various Python files: Input_abs.py, Input_float.py, input_pow.py, Input.py (2), list_alkes.py, list_balik_urutan.py (selected), list_hapus_anggota.py, list_insert.py, list_memotong.py, list_negatif.py, list_tambah_ang... (2), list_ubah_anggota.py, list_urut_anggota.py, Output.py, string_index_lan.py, string_index.py, String_len.py, and string_slice.py.
- Code Editor:** Displays the following Python code:

```
list_balik_urutan.py > ...
1 alphabet =['a','c','d','e','b']
2 alphabet.reverse()
3 print(alphabet)
4 # output [ 'b', 'e', 'd', 'c', 'b', 'a']
```
- Terminal:** Shows a Windows PowerShell window with the following output:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python.Modul 2> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '53005' '--' 'c:\Users\LENOVO\Documents\Python.Modul 2\list_balik_urutan.py'
['b', 'e', 'd', 'c', 'a']
PS C:\Users\LENOVO\Documents\Python.Modul 2>
```
- Status Bar:** Ln 4, Col 33, Spaces:4, UTF-8, CRLF, Python 3.11.2 64-bit (microsoft store), 28°C Sebagian cerah, 6:30 PM.

Python – Modul 3

1. Membuat Tuple

The screenshot shows the Visual Studio Code interface with two main windows. The top window displays the file `tuple_bersarang.py` containing Python code for tuple operations. The bottom window shows a terminal window with the output of running the code.

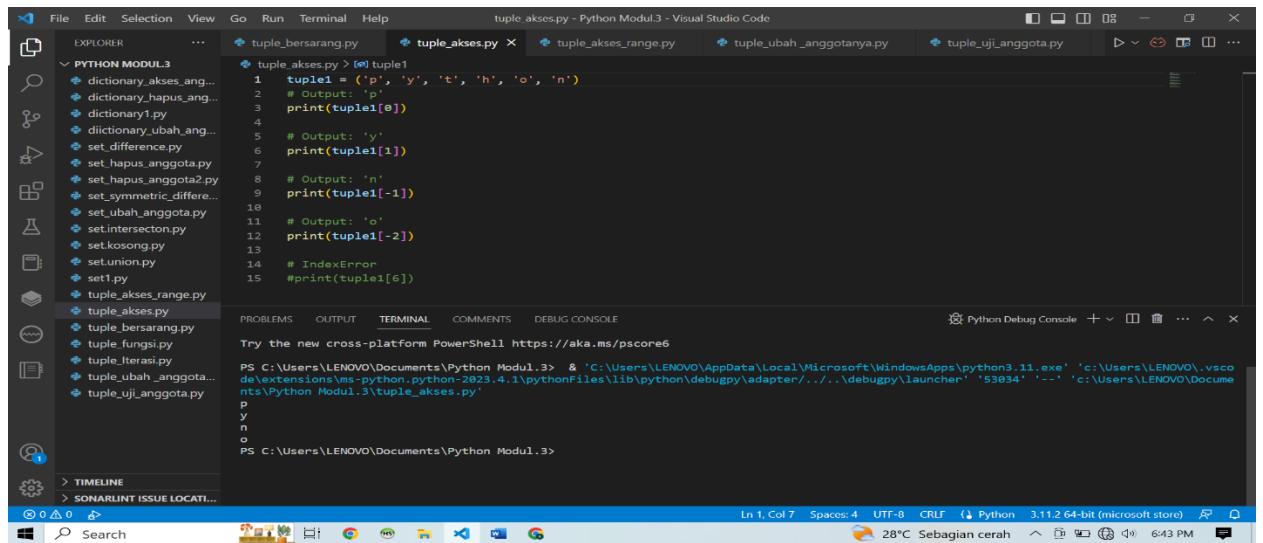
File Content (`tuple_bersarang.py`):

```
tuple_bersarang.py > ...
1 # membuat tuple kosong
2 # Output: ()
3 tuple1 = ()
4 print(tuple1)
5
6 # tuple dengan 1 elemen
7 # Output: (1,)
8 tuple1= (1,)
9 print (tuple1)
10
11 # tuple berisi integer
12 # Output = (1, 2, 3)
13 tuple1= (1, 2, 3)
14 print (tuple1)
15
16 # tuple bersarang
17 # # Output: ("Hello", [1, 2, 3], (4, 5, 6))
18 tuple1= ("Hello", [1, 2, 3], (4, 5, 6))
19 print(tuple1)
20
21 # Tuple bisa tidak menggunakan tanda ()
22 # Output (1, 2, 3)
23 tuple1 = 1, 2, 3
24 print(tuple1)
25
26 # memasukkan anggota tuple ke variabel yang bersesuaian
27 # a akan berisi 1, b berisi 2, dan c berisi 3
28 # Output 1 2 3
29 a, b, c = tuple1
30 print(a, b, c)
```

Terminal Output:

```
PS C:\Users\LENOVO\Documents\Python Modul.3> c:; cd 'c:\Users\LENOVO\Documents\Python Modul.3'; & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '53030' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_bersarang.py'
()
()
(1, 2, 3)
('Hello', [1, 2, 3], (4, 5, 6))
(1, 2, 3)
1 2 3
```

2. Mengakses Anggota Tuple

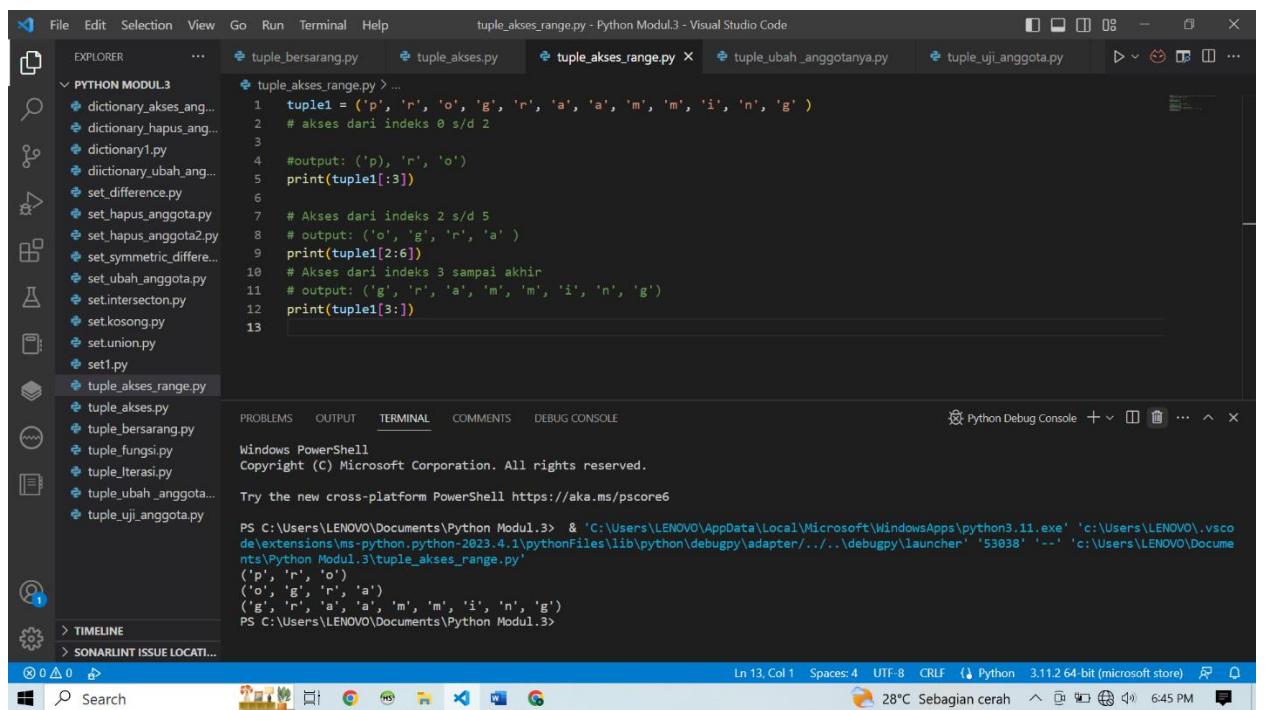


A screenshot of Visual Studio Code showing the file `tuple_akses.py`. The code defines a tuple `tuple1 = ('p', 'y', 't', 'h', 'o', 'n')` and prints its elements at indices 0, 1, -1, and -2. The terminal shows the output: 'p', 'y', 'n', and 'o' respectively.

```
tuple1 = ('p', 'y', 't', 'h', 'o', 'n')
# Output: 'p'
print(tuple1[0])
# Output: 'y'
print(tuple1[1])
# Output: 'n'
print(tuple1[-1])
# Output: 'o'
print(tuple1[-2])
```

The terminal also displays the command to run the script: `PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python\2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53034' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_akses.py'`.

a. Mengakses Tuple dengan range



A screenshot of Visual Studio Code showing the file `tuple_akses_range.py`. The code defines a tuple `tuple1 = ('p', 'r', 'o', 'g', 'r', 'a', 'a', 'm', 'm', 'i', 'n', 'g')` and prints its elements from index 0 to 3, 2 to 5, and 3 to the end. The terminal shows the output: ('p', 'r', 'o'), ('o', 'g', 'r', 'a'), and ('g', 'r', 'a', 'a', 'm', 'm', 'i', 'n', 'g') respectively.

```
tuple1 = ('p', 'r', 'o', 'g', 'r', 'a', 'a', 'm', 'm', 'i', 'n', 'g')
# akses dari indeks 0 s/d 2
# output: ('p', 'r', 'o')
print(tuple1[3:])

# Akses dari indeks 2 s/d 5
# output: ('o', 'g', 'r', 'a')
print(tuple1[2:6])

# Akses dari indeks 3 sampai akhir
# output: ('g', 'r', 'a', 'a', 'm', 'm', 'i', 'n', 'g')
print(tuple1[3:])
```

The terminal also displays the command to run the script: `PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python\2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53038' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_akses_range.py'`.

3. Mengubah Anggota Tuple

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows multiple Python files in the "PYTHON MODUL.3" folder, including `tuple_ubah_anggotanya.py`, `tuple_uji_anggota.py`, `tuple_Iterasi.py`, `tuple_fungsi.py`, `set1.py`, and `setkoson.py`.
- Code Editor:** Displays the content of `tuple_ubah_anggotanya.py`. The code attempts to change an element in a tuple:tuple1 = (2, 3, 4, [5,6])
kita tidak bisa mengubah anggota tuple
bila kita hilangkan tanda komentar # pada baris ke 6
akan muncul error: # TypeError: 'tuple' object does not support item assignment
tuple[1] = 8
tapi list di dalam tuple bisa diubah
output: (2, 3, 4, [7,6])
tuple1[3][0] = 7
print(tuple1)
tuple bisa diganti secara keseluruhan dengan penugasan kembali
output: ('p', 'y', 't', 'h', 'o', 'n')
tuple1 = ('p', 'y', 't', 'h', 'o', 'n')
print(tuple1)
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode/extensions/ms-python.python_2023.4.1\pythonFiles\lib\python\debugpy\adapter\..\..\debugpy\launcher' '53043' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_ubah_anggotanya.py'. The output shows the tuple being modified.
- Status Bar:** Shows the file path as `C:\Users\LENOVO\Documents\Python Modul.3\tuple_ubah_anggotanya.py`, line 17, column 11, and other system information like temperature (28°C) and time (6:52 PM).

4. Menguji Keanggotaan Tuple

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows multiple Python files in the "PYTHON MODUL.3" folder, including `tuple_uji_anggota.py`, `tuple_ubah_anggotanya.py`, `tuple_Iterasi.py`, `tuple_fungsi.py`, `set1.py`, and `setkoson.py`.
- Code Editor:** Displays the content of `tuple_uji_anggota.py`. The code uses `in` and `not in` operators to check tuple membership:tuple1 = (1, 2, 3, 'a', 'b', 'c')
menggunakan in
output: true
print(3 in tuple1)
output: False
print(2 in tuple1)
output: False
print('e' in tuple1)
menggunakan not in
output true
print('k' not in tuple1)
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode/extensions/ms-python.python_2023.4.1\pythonFiles\lib\python\debugpy\adapter\..\..\debugpy\launcher' '53048' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_uji_anggota.py'. The output shows the results of the membership checks.
- Status Bar:** Shows the file path as `C:\Users\LENOVO\Documents\Python Modul.3\tuple_uji_anggota.py`, line 15, column 25, and other system information like temperature (28°C) and time (6:54 PM).

5. Iterasi pada Tuple

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a list of Python files in the "PYTHON MODUL.3" folder, including tuple_ubah_anggotanya.py, tuple_uji_anggota.py, tuple_Iterasi.py, tuple_fungsi.py, set1.py, and setkosong.py.
- Code Editor:** Displays the content of tuple_Iterasi.py:

```
tuple_Iterasi.py > ...
1  # output:
2  # Hai Sistem
3  # Hai Informasi
4  name = ('Sistem', 'informasi')
5  for a in name:
6      print('Hai', a)
```
- Terminal:** Shows the output of running the script:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53052' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_Iterasi.py'
Hai Sistem
Hai informasi
PS C:\Users\LENOVO\Documents\Python Modul.3>
```
- Status Bar:** Shows the file path as "tuple_Iterasi.py - Python Modul.3 - Visual Studio Code", line 6, column 17, and other system information like temperature and battery level.

6. Metode dan Fungsi Bawaan Tuple

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a list of Python files in the "PYTHON MODUL.3" folder, including tuple_ubah_anggotanya.py, tuple_uji_anggota.py, tuple_Iterasi.py, tuple_fungsi.py, set1.py, and setkosong.py.
- Code Editor:** Displays the content of tuple_fungsi.py:

```
tuple_fungsi.py > ...
1  tuple1 = ('p', 'y', 't', 'o', 'n', 's', 'a', 'y', 'a')
2  # count
3  # output: 2
4  print(tuple1.count('a'))
5
6  # index
7  # Output 4
8  print(tuple1.index('n'))
```
- Terminal:** Shows the output of running the script:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53056' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\tuple_fungsi.py'
2
4
PS C:\Users\LENOVO\Documents\Python Modul.3>
```
- Status Bar:** Shows the file path as "tuple_fungsi.py - Python Modul.3 - Visual Studio Code", line 8, column 25, and other system information like temperature and battery level.

7. Membuat Set

```
tuple_ubah_anggotanya.py | tuple_uji_anggota.py | tuple_Iterasi.py | tuple_fungsi.py | set1.py | setkosong.py
set dengan menggunakan fungsi set()
set_saya = set([1,2,3])
print(set_saya)

# set data campuran
set_saya = {1, 2.0, "Python", (3,4,4)}
print(set_saya)

# bila kita mengisi duplikasi, set akan menghilangkan salah satu
# output: {1,2,3}
set_saya = {1,2,2,3,3,3}
print(set_saya)

# set tidak bisa berisi anggota list
# contoh berikut akan muncul error TypeError
set_saya = {1,2,[3,4,5]}

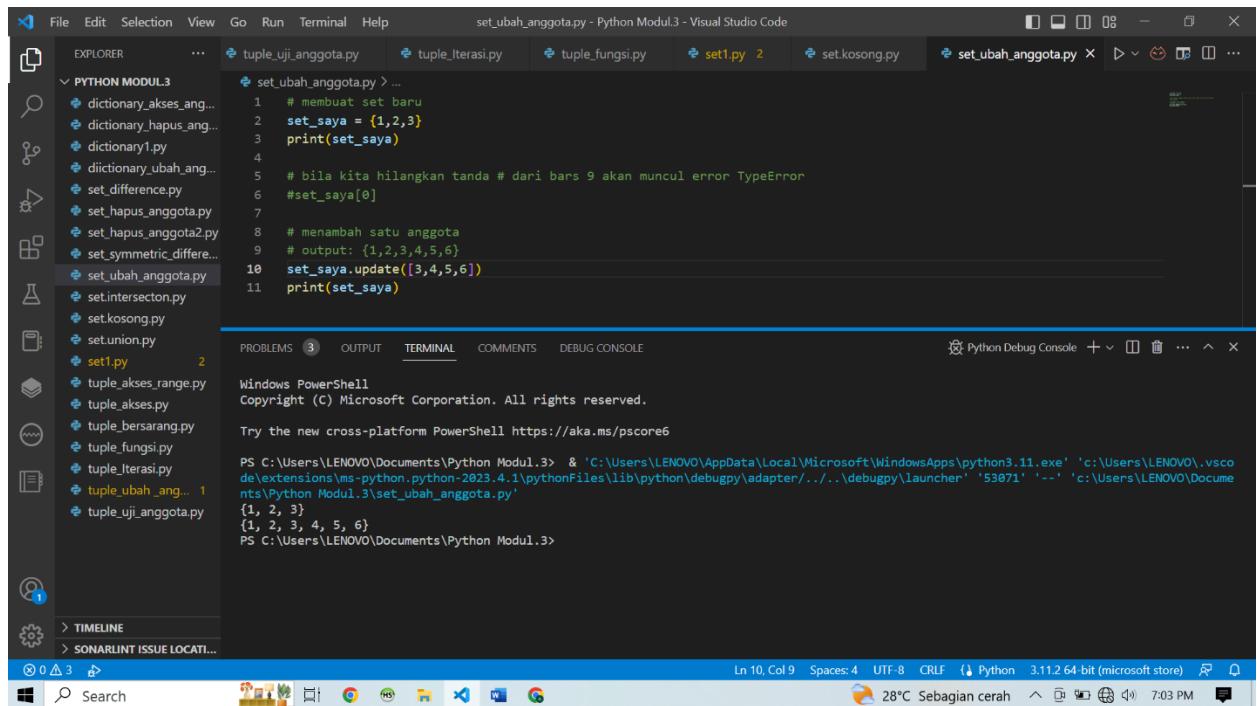
PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '53061' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set1.py'
{1, 2, 3}
{1, 2, 3}
{1, 2.0, 'Python', (3, 4, 4)}
{1, 2, 3}
Traceback (most recent call last):
File "c:\Users\LENOVO\Documents\Python Modul.3\set1.py", line 20, in <module>
    set_saya = {1,2,[3,4,5]}
          ^^^^^^^^^^^^^^
TypeError: unhashable type: 'list'
PS C:\Users\LENOVO\Documents\Python Modul.3>
```

a. Set Kosong

```
tuple_ubah_anggotanya.py | tuple_uji_anggota.py | tuple_Iterasi.py | tuple_fungsi.py | set1.py | setkosong.py
# membuat variabel a dengan {}
a = {}
print(type(a))
# output <class 'dict'>

# harus menggunakan fungsi set()
a = set()
print(type(a))
# output <class 'set'>
```

8. Mengubah Anggota Set



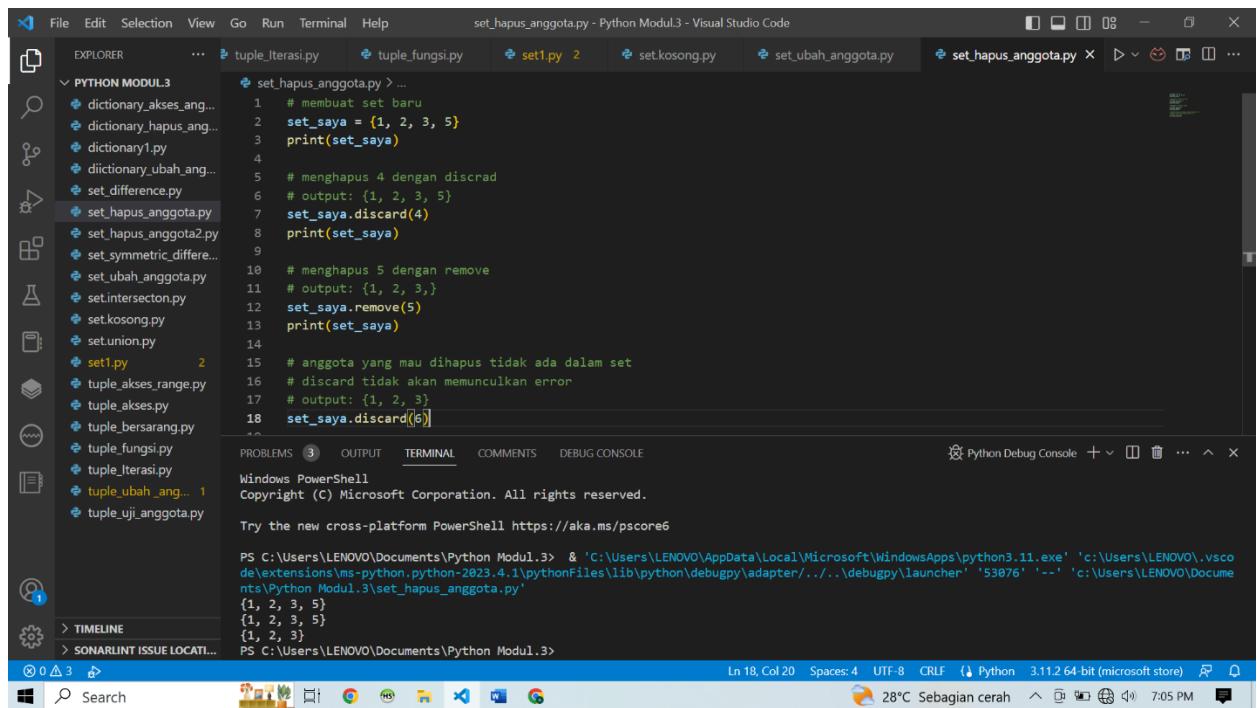
The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a list of Python files in the "PYTHON MODUL.3" folder, including `set_ubah_anggota.py`.
- Code Editor:** Displays the following Python code:

```
1 # membuat set baru
2 set_saya = {1,2,3}
3 print(set_saya)
4
5 # bila kita hilangkan tanda # dari bars 9 akan muncul error TypeError
6 #set_saya[0]
7
8 # menambah satu anggota
9 # output: {1,2,3,4,5,6}
10 set_saya.update([3,4,5,6])
11 print(set_saya)
```
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '53071' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set_ubah_anggota.py'
Output:

```
{1, 2, 3}
{1, 2, 3, 4, 5, 6}
```
- Status Bar:** Shows "Ln 10, Col 9" and "Python 3.11.2 64-bit (microsoft store)".

9. Menghapus Anggota Set



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a list of Python files in the "PYTHON MODUL.3" folder, including `set_hapus_anggota.py`.
- Code Editor:** Displays the following Python code:

```
1 # membuat set baru
2 set_saya = {1, 2, 3, 5}
3 print(set_saya)
4
5 # menghapus 4 dengan discard
6 # output: {1, 2, 3, 5}
7 set_saya.discard(4)
8 print(set_saya)
9
10 # menghapus 5 dengan remove
11 # output: {1, 2, 3}
12 set_saya.remove(5)
13 print(set_saya)
14
15 # anggota yang mau dihapus tidak ada dalam set
16 # discard tidak akan memunculkan error
17 # output: {1, 2, 3}
18 set_saya.discard(5)
```
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../debugpy\launcher' '53076' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set_hapus_anggota.py'
Output:

```
{1, 2, 3, 5}
{1, 2, 3}
{1, 2, 3}
```
- Status Bar:** Shows "Ln 18, Col 20" and "Python 3.11.2 64-bit (microsoft store)".

a. Menghapus Anggota Set Secara Random dengan pop()

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like fungsipy, set1.py, set.kosong.py, set_ubah_anggota.py, set_hapus_anggota.py, set_symmetric_differenc... (partially visible), set_ubah_anggota.py, set.intersector.py, set.kosong.py, set.union.py, set1.py (highlighted in yellow), tuple_akses_range.py, tuple_akses.py, tuple_bersarang.py, tuple_fungsi.py, tuple_iterasi.py, and tuple_ubi... (partially visible).
- Code Editor:** Displays the content of set1.py, which demonstrates how to remove elements from a set using the pop() method.
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53088' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set_hapus_anggota2.py'. The output shows the removal of elements from a set named "set_saya".
- Status Bar:** ShowsLn 18, Col 17, Spaces: 4, UTF-8, CRLF, Python 3.11.2 64-bit (microsoft store), 28°C Sebagian cerah, 7:07 PM.

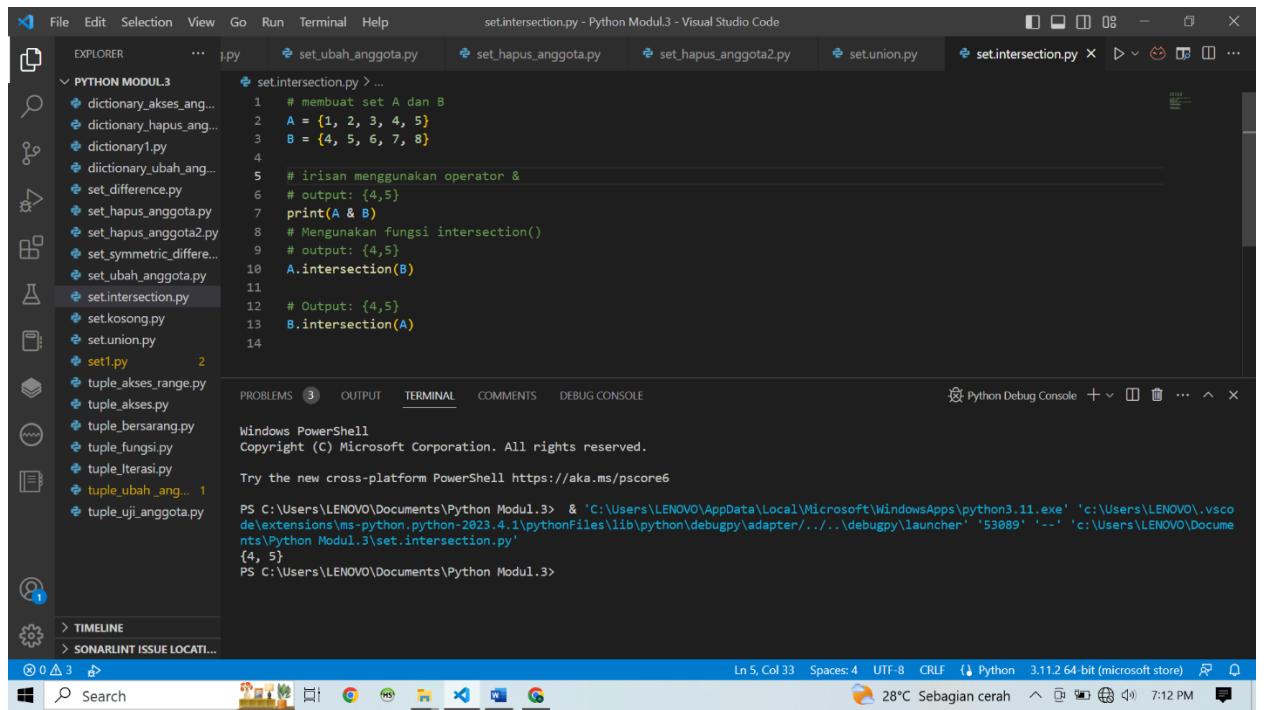
10. Operasi Set di Python

a. Operasi Gabungan (Union)

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like 1.py (highlighted in yellow), set.kosong.py, set_ubah_anggota.py, set_hapus_anggota.py, set_symmetric_differenc... (partially visible), set_ubah_anggota.py, set.intersector.py, set.kosong.py, set.union.py, set1.py (highlighted in yellow), tuple_akses_range.py, tuple_akses.py, tuple_bersarang.py, tuple_fungsi.py, tuple_iterasi.py, and tuple_ubi... (partially visible).
- Code Editor:** Displays the content of 1.py, which demonstrates two ways to perform set union: using the | operator and using the union() method.
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscodeextensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53084' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set.union.py'. The output shows the result of unioning sets A and B.
- Status Bar:** ShowsLn 10, Col 35, Spaces: 4, UTF-8, CRLF, Python 3.11.2 64-bit (microsoft store), 28°C Sebagian cerah, 7:10 PM.

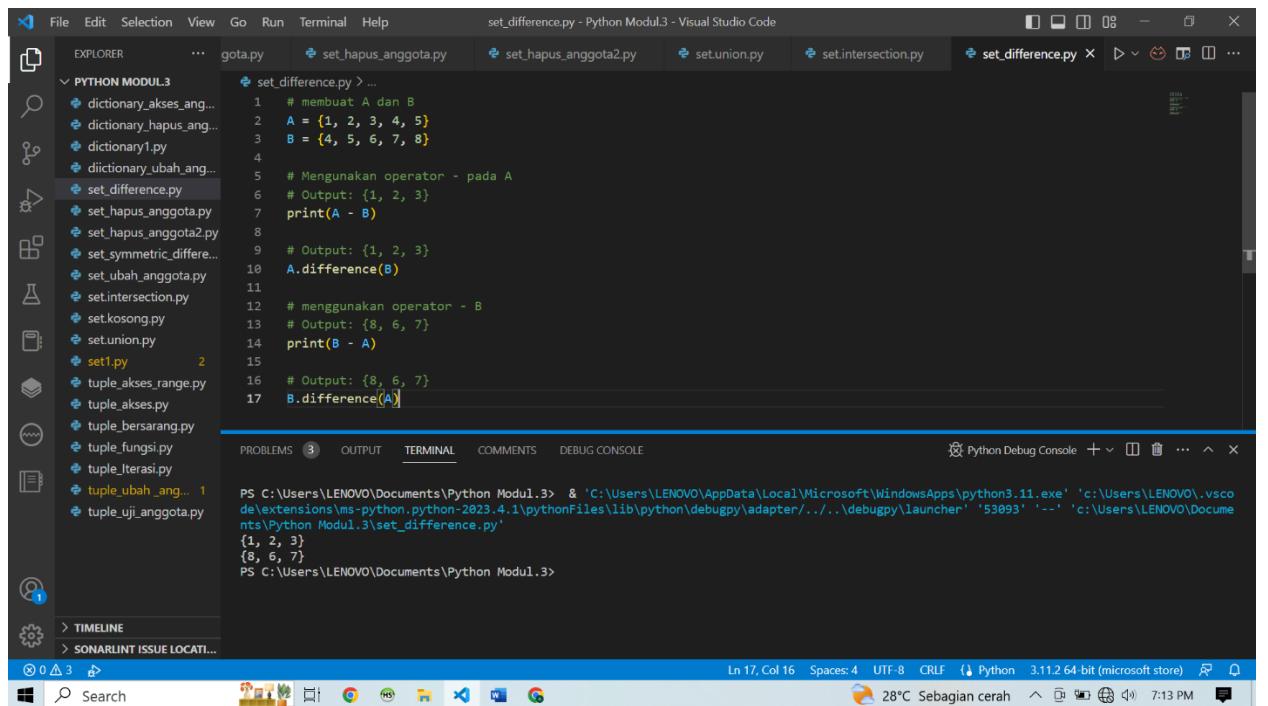
b. Operator Irisan (Intersection)



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like "set.ubah_anggota.py", "set.hapus_anggota.py", etc.
- Code Editor:** Displays the content of "set.intersection.py". The code creates two sets A and B, then prints their intersection using both the "&" operator and the built-in `intersection()` method.
- Terminal:** Shows the command line output for running the script, resulting in the output {4, 5}.
- Status Bar:** Shows the file path "C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\Documents\Python Modul.3\set.intersection.py'", line 5, column 33, and other system information.

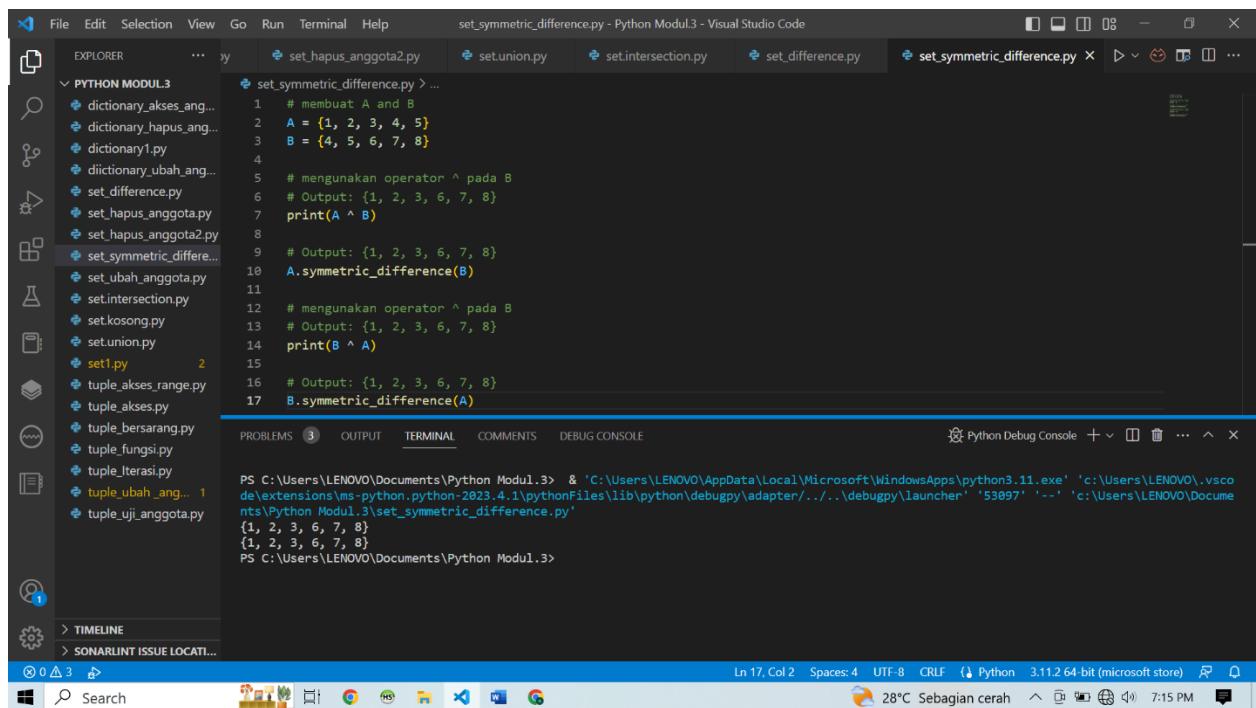
c. Operasi Selisi (Difference)



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like "set.ubah_anggota.py", "set.hapus_anggota.py", etc.
- Code Editor:** Displays the content of "set.difference.py". The code creates two sets A and B, then prints their difference using both the "-" operator and the built-in `difference()` method.
- Terminal:** Shows the command line output for running the script, resulting in the output {1, 2, 3} and {8, 6, 7} respectively.
- Status Bar:** Shows the file path "C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\Documents\Python Modul.3\set_difference.py'", line 17, column 16, and other system information.

d. Operasi Komplemen (Symmetric Difference)

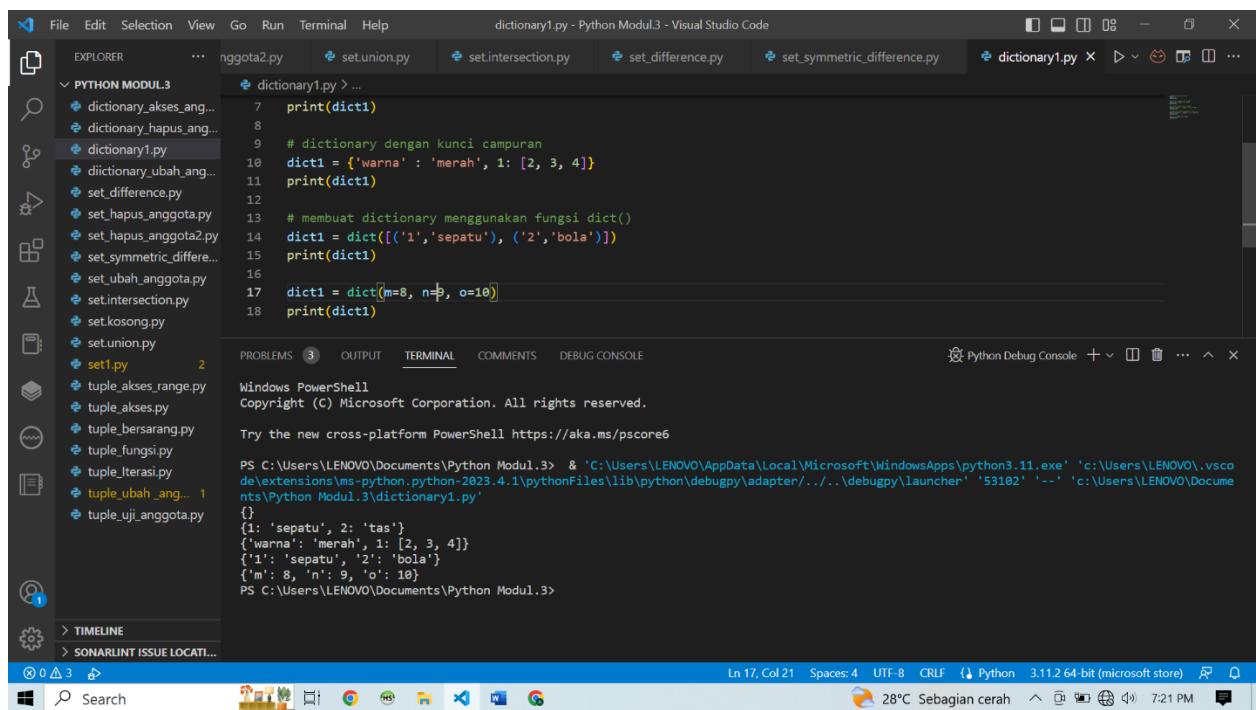


The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like "set_hapus_anggota2.py", "set.union.py", etc.
- Code Editor:** Displays the content of "set_symmetric_difference.py". The code uses sets A and B to demonstrate the symmetric difference operation (A ^ B) and (B ^ A), which both result in {1, 2, 3, 6, 7, 8}.
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter'... \debugpy\launcher '53097' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\set_symmetric_difference.py'. The output shows the expected results for both operations.
- Status Bar:** Includes information such as "Ln 17, Col 2", "Spaces: 4", "UTF-8", "CRLF", "Python 3.11.2 64-bit (microsoft store)", "28°C Sebagian cerah", and the current date and time.

11. Dictionary

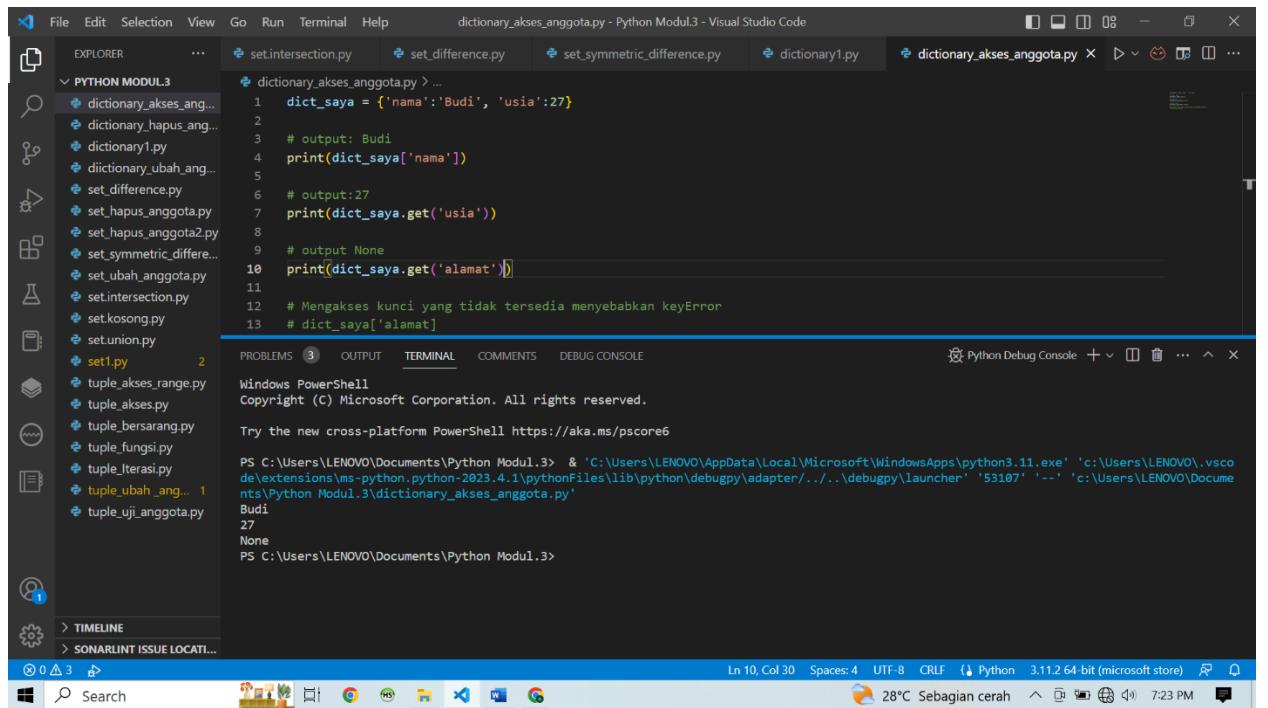
a. Membuat Dictionary



The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing various Python files like "nggota2.py", "set.union.py", etc.
- Code Editor:** Displays the content of "dictionary1.py". The code creates a dictionary "dict1" with mixed key types (string and list) and values (list and integer).
- Terminal:** Shows the command PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter'... \debugpy\launcher '53102' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\dictionary1.py'. The output shows the resulting dictionary structure.
- Status Bar:** Includes information such as "Ln 17, Col 21", "Spaces: 4", "UTF-8", "CRLF", "Python 3.11.2 64-bit (microsoft store)", "28°C Sebagian cerah", and the current date and time.

b. Mengakses Anggota Dictionary

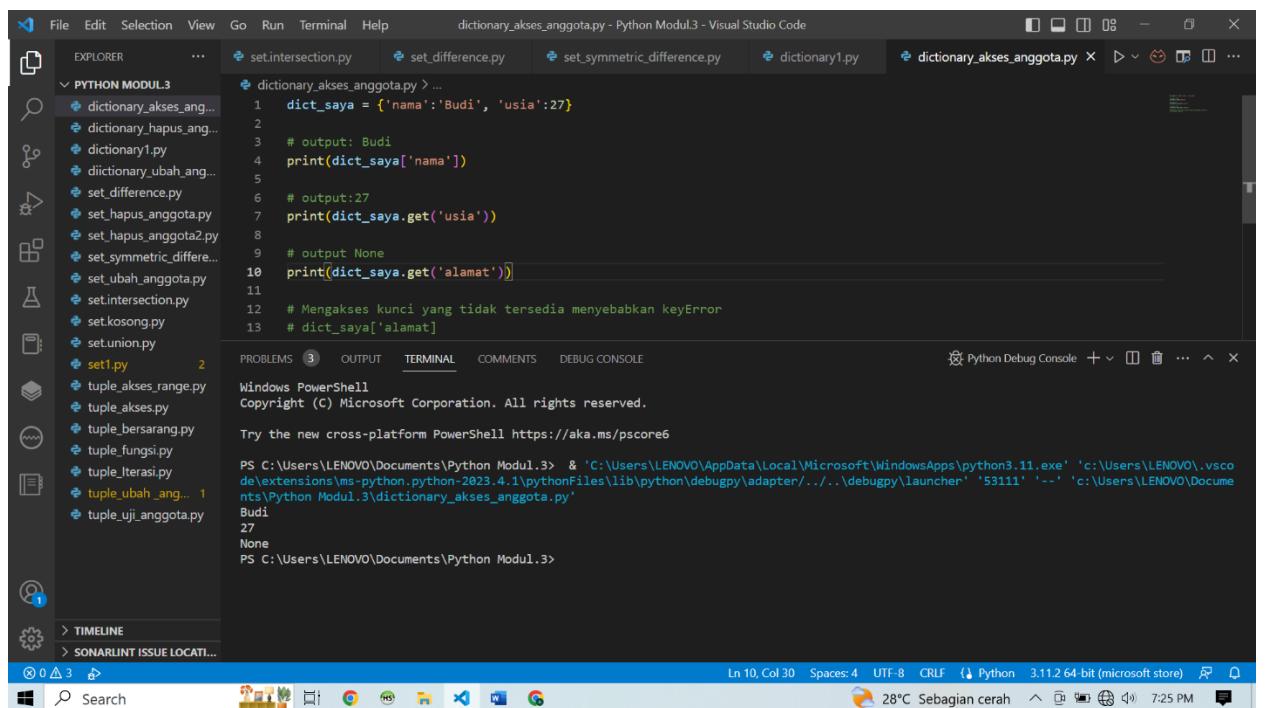


The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing several Python files: set.intersection.py, set_difference.py, set_symmetric_difference.py, dictionary1.py, and dictionary_akses_anggota.py.
- Code Editor:** Displays the content of dictionary_akses_anggota.py. The code defines a dictionary `dict_saya = {'nama': 'Budi', 'usia': 27}`. It then prints the value for 'nama' and 'usia', and attempts to print values for non-existent keys 'alamat' and 'kunci'.
- Terminal:** Shows the output of running the script in a Windows PowerShell. The output is:

```
Budi
27
None
PS C:\Users\LENOVO\Documents\Python Modul.3>
```
- Status Bar:** Shows the current file is "dictionary_akses_anggota.py", the line is 10, column is 30, and the Python version is 3.11.2 64-bit (microsoft store).

c. Mengubah Anggota Dictionary

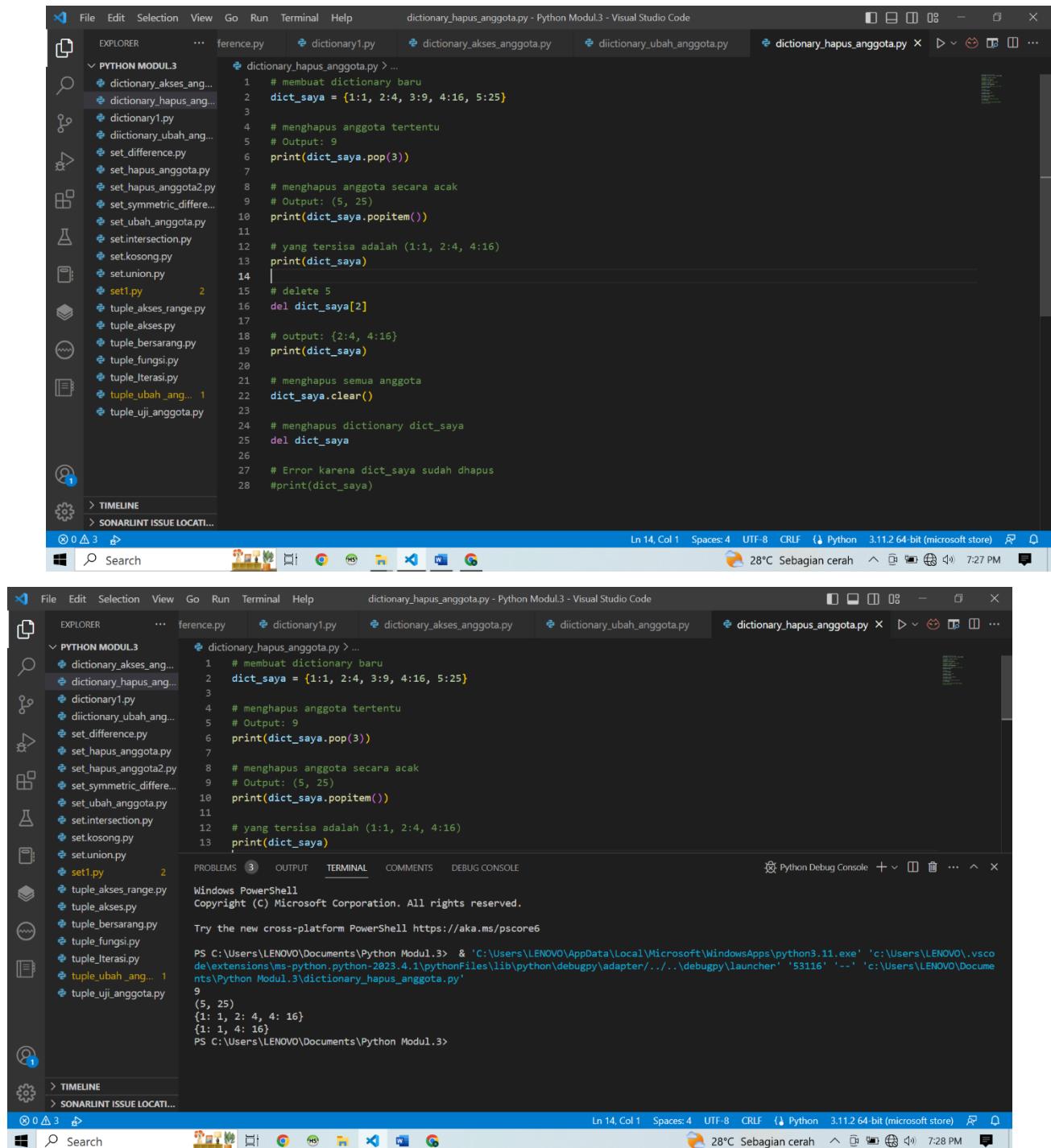


The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a folder named "PYTHON MODUL.3" containing several Python files: set.intersection.py, set_difference.py, set_symmetric_difference.py, dictionary1.py, and dictionary_akses_anggota.py.
- Code Editor:** Displays the content of dictionary_akses_anggota.py. The code defines a dictionary `dict_saya = {'nama': 'Budi', 'usia': 27}`. It then changes the value for 'usia' to 28 and prints the updated dictionary.
- Terminal:** Shows the output of running the script in a Windows PowerShell. The output is:

```
Budi
28
{'nama': 'Budi', 'usia': 28}
PS C:\Users\LENOVO\Documents\Python Modul.3>
```
- Status Bar:** Shows the current file is "dictionary_akses_anggota.py", the line is 10, column is 30, and the Python version is 3.11.2 64-bit (microsoft store).

d. Menghapus Anggota Dictionary



The screenshot shows two instances of Visual Studio Code running side-by-side. Both instances have the same file open: `dictionary_hapus_anggota.py`. The code is as follows:

```
# membuat dictionary baru
dict_saya = {1:1, 2:4, 3:9, 4:16, 5:25}

# menghapus anggota tertentu
# Output: 9
print(dict_saya.pop(3))

# menghapus anggota secara acak
# Output: (5, 25)
print(dict_saya.popitem())

# yang tersisa adalah (1:1, 2:4, 4:16)
print(dict_saya)

# menghapus semua anggota
dict_saya.clear()

# menghapus dictionary dict_saya
del dict_saya

# Error karena dict_saya sudah dihapus
#print(dict_saya)
```

The bottom instance of VS Code has a terminal window open, showing the output of running the script in PowerShell. The output is:

```
PS C:\Users\LENOVO\Documents\Python Modul.3> & 'C:\Users\LENOVO\AppData\Local\Microsoft\WindowsApps\python3.11.exe' 'c:\Users\LENOVO\vscode\extensions\ms-python.python-2023.4.1\pythonFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '53116' '--' 'c:\Users\LENOVO\Documents\Python Modul.3\dictionary_hapus_anggota.py'
9
(5, 25)
{1: 1, 2: 4, 4: 16}
{1: 1, 4: 16}
PS C:\Users\LENOVO\Documents\Python Modul.3>
```