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NIM : 20.01.013.001
Kelas : C
Mata Kuliah : Pemrograman Python

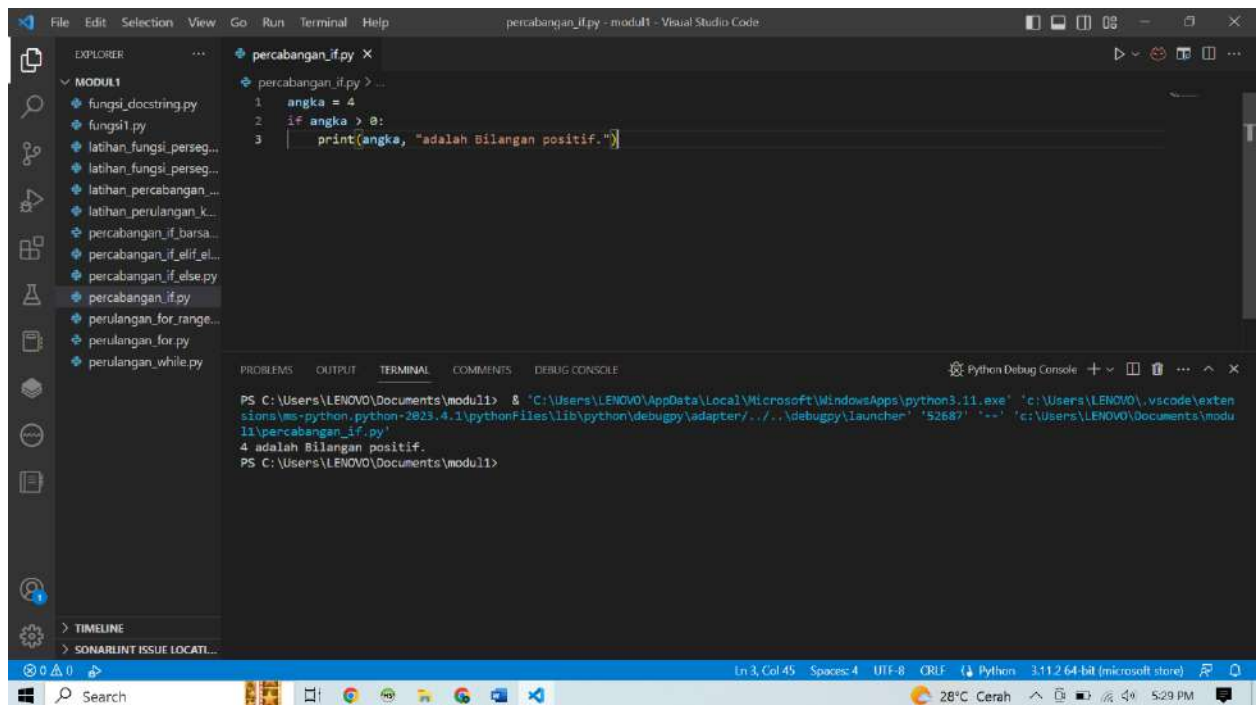
Task 4

Python Modul 4

Percabangan

1. Pernyataan if

Terdiri dari ekspresi Boolean diikuti satu baris atau lebih pernyataan



The screenshot shows the Visual Studio Code interface with a file explorer on the left and a code editor in the center. The file explorer shows a project named 'modul1' with several files, including 'percabangan_if.py'. The code editor displays the following Python code:

```
1 angka = 4  
2 if angka > 0:  
3     print(angka, "adalah Bilangan positif.")
```

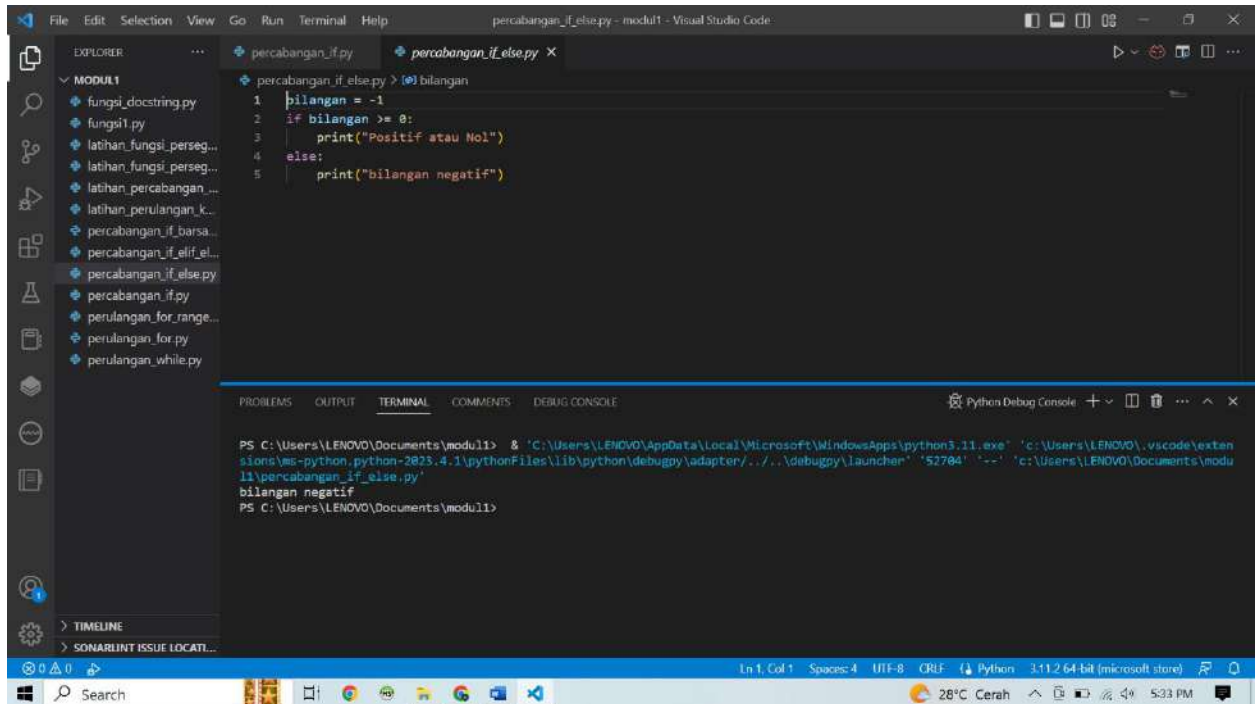
Below the code editor, the 'TERMINAL' tab is active, showing the command prompt output:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52687' '-vv' 'c:\Users\LENOVO\Documents\modul1\percabangan_if.py'  
4 adalah Bilangan positif.  
PS C:\Users\LENOVO\Documents\modul1>
```

The status bar at the bottom indicates the file is 'Ln 3, Col 45', uses 'Spaces: 4', 'UTF-8' encoding, 'CRLF' line endings, and is a 'Python 3.11.2 64-bit (microsoft store)' file.

2. Pernyataan if_else

Ada 2 kondisi, komdisi pertaman kalau benar dan kondisi ke dua kalau salah.



The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'percabangan_if_else.py' with the following code:

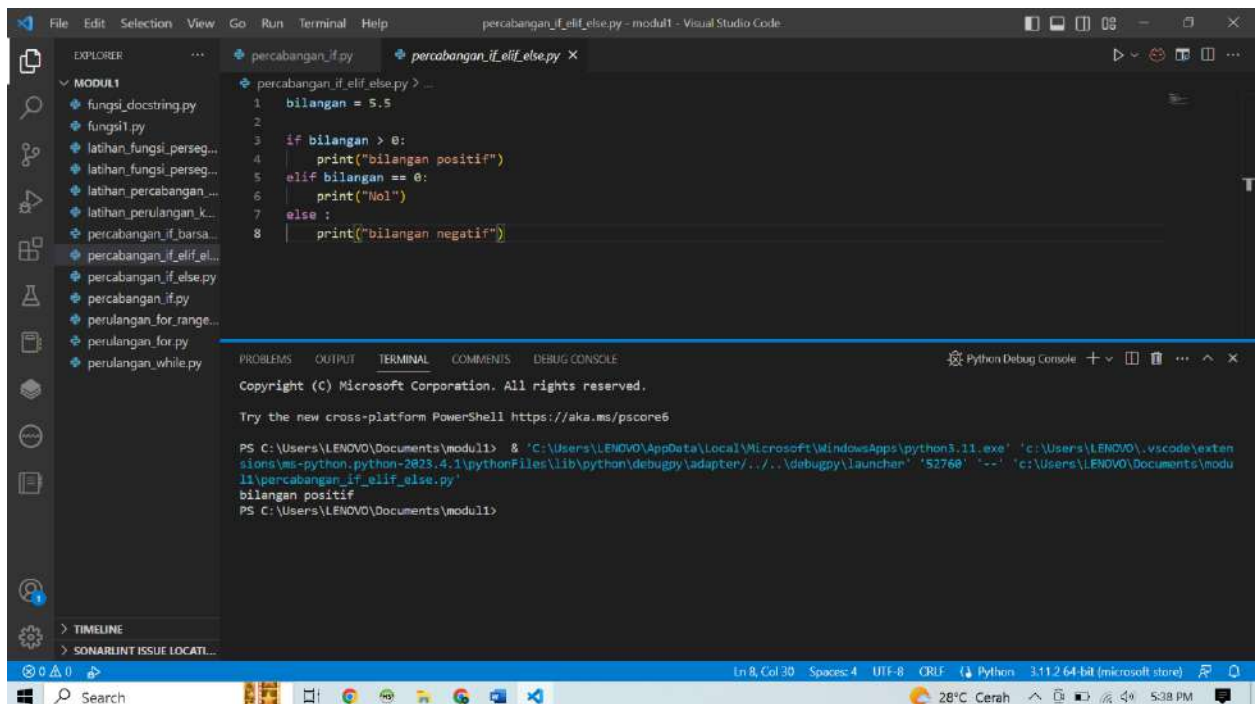
```
1 bilangan = -1
2 if bilangan >= 0:
3     print("Positif atau Nol")
4 else:
5     print("bilangan negatif")
```

The terminal at the bottom shows the command to run the script and its output:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52784' '--' 'c:\Users\LENOVO\Documents\modul1\percabangan_if_else.py'
bilangan negatif
PS C:\Users\LENOVO\Documents\modul1>
```

3. Pernyataan if_elif_else

Pernyataan if_elif_else digunakan untuk menguji lebih dari 2 kondisi



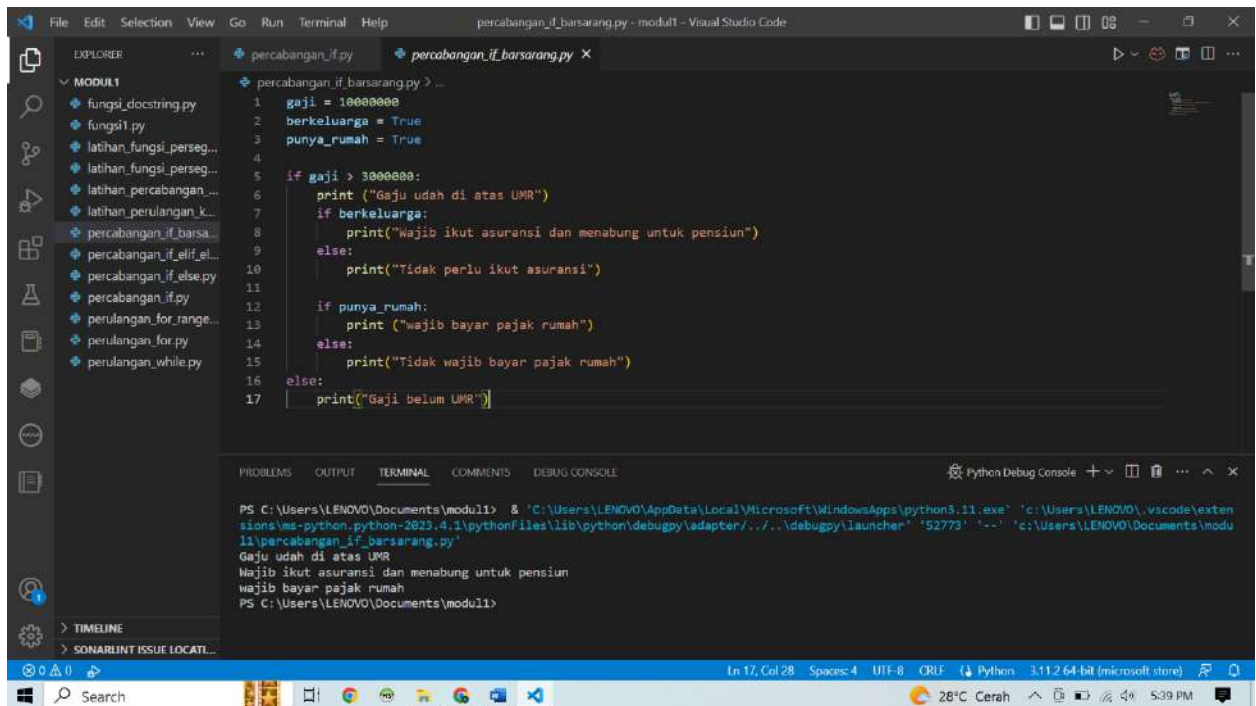
The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'percabangan_if_elif_else.py' with the following code:

```
1 bilangan = 5.5
2
3 if bilangan > 0:
4     print("bilangan positif")
5 elif bilangan == 0:
6     print("Nol")
7 else:
8     print("bilangan negatif")
```

The terminal at the bottom shows the command to run the script and its output:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52768' '--' 'c:\Users\LENOVO\Documents\modul1\percabangan_if_elif_else.py'
bilangan positif
PS C:\Users\LENOVO\Documents\modul1>
```

4. Tambahkan : if Bersarang



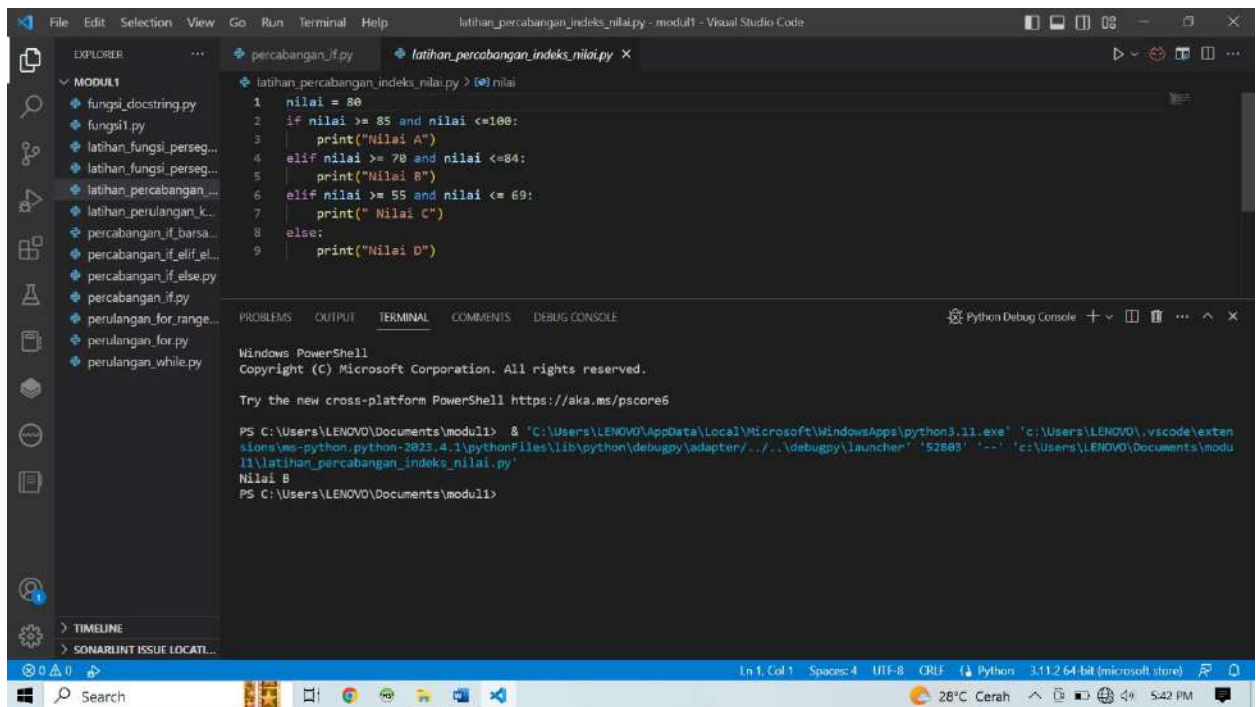
The screenshot shows the Visual Studio Code interface with a Python file named `percabangan_if_bersarang.py` open. The code defines variables `gaji = 10000000`, `berkeluarga = True`, and `punya_rumah = True`. It then uses nested if statements to print messages based on these conditions. The terminal output shows the execution results.

```
1 gaji = 10000000
2 berkeluarga = True
3 punya_rumah = True
4
5 if gaji > 30000000:
6     print("Gaji udah di atas UMR")
7     if berkeluarga:
8         print("Wajib ikut asuransi dan menabung untuk pensiun")
9     else:
10        print("Tidak perlu ikut asuransi")
11
12 if punya_rumah:
13     print("wajib bayar pajak rumah")
14 else:
15     print("Tidak wajib bayar pajak rumah")
16 else:
17     print("Gaji belum UMR")
```

Terminal Output:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52773' '--' 'c:\Users\LENOVO\Documents\modul1\percabangan_if_bersarang.py'
Gaji udah di atas UMR
Wajib ikut asuransi dan menabung untuk pensiun
wajib bayar pajak rumah
PS C:\Users\LENOVO\Documents\modul1>
```

5. Contoh Program Percabangan Indeks Nilai Statis



The screenshot shows the Visual Studio Code interface with a Python file named `latihan_percabangan_indeks_nilai.py` open. The code defines a variable `nilai = 80` and uses a series of if-elif-else statements to print a letter grade based on the value of `nilai`. The terminal output shows the execution results.

```
1 nilai = 80
2 if nilai >= 85 and nilai <= 100:
3     print("Nilai A")
4 elif nilai >= 70 and nilai <= 84:
5     print("Nilai B")
6 elif nilai >= 55 and nilai <= 69:
7     print("Nilai C")
8 else:
9     print("Nilai D")
```

Terminal Output:

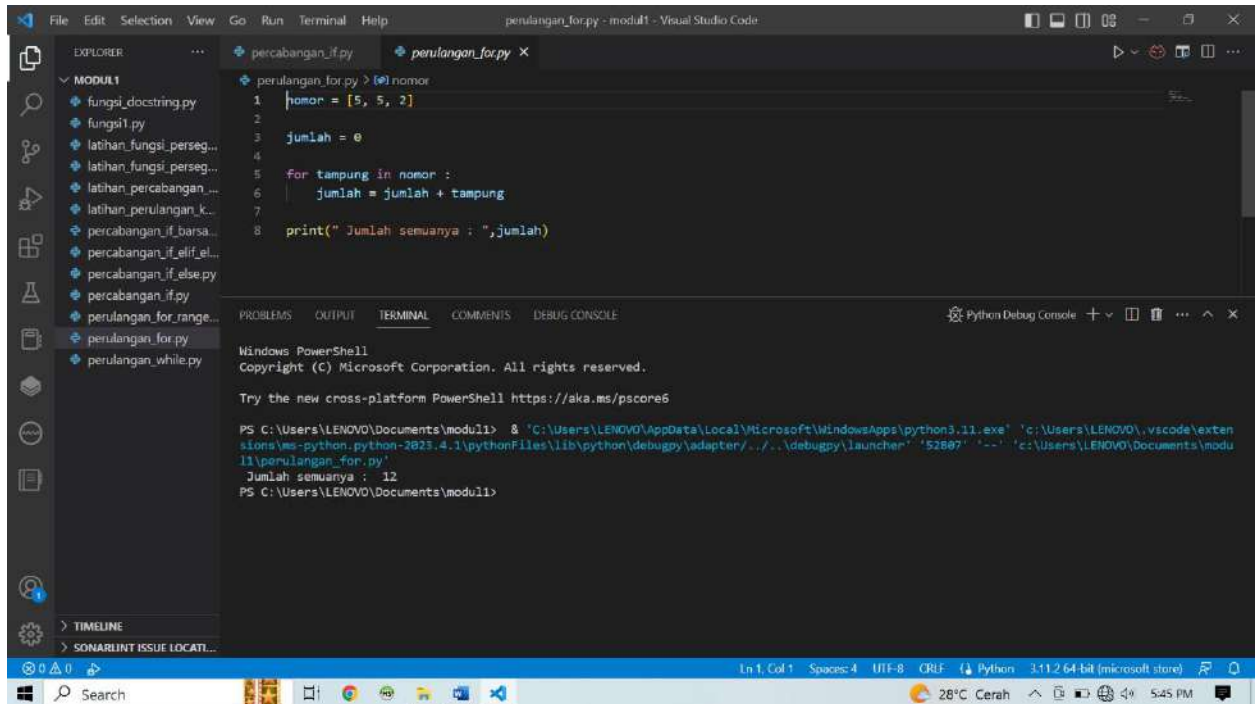
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/powershell

PS C:\Users\LENOVO\Documents\modul1> & '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' '52803' '--' 'c:\Users\LENOVO\Documents\modul1\latihan_percabangan_indeks_nilai.py'
Nilai B
PS C:\Users\LENOVO\Documents\modul1>
```

Perulangan

1. Perulangan dengan menggunakan for



The screenshot shows the Visual Studio Code interface with a Python file named `perulangan_for.py` open. The file contains a for loop that iterates over the list `nomor = [5, 5, 2]` and calculates the sum of its elements. The terminal output shows the execution of the script, resulting in the output `Jumlah semuanya : 12`.

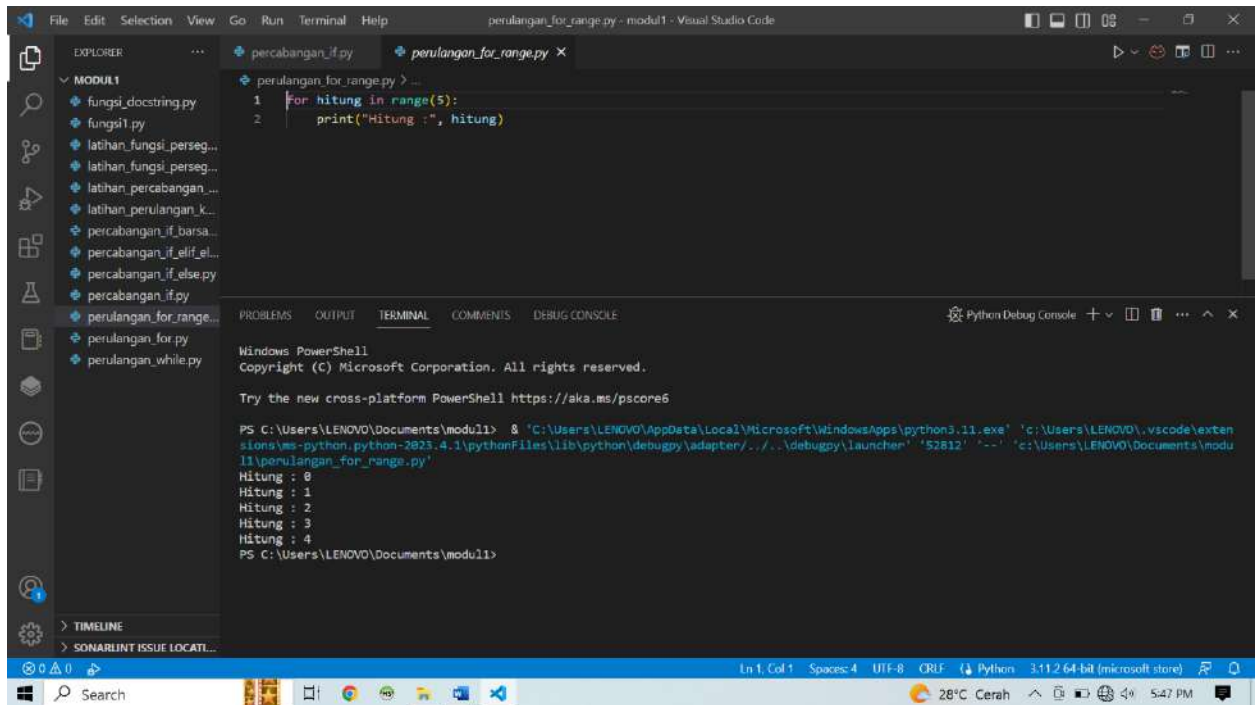
```
perulangan_for.py > [0] nomor
1 nomor = [5, 5, 2]
2
3 jumlah = 0
4
5 for tampung in nomor :
6     jumlah = jumlah + tampung
7
8 print(" Jumlah semuanya : ", jumlah)
```

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

PS C:\Users\LENOVO\Documents\modul1> & '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' '52807' '--' 'c:\Users\LENOVO\Documents\modul1\perulangan_for.py'
Jumlah semuanya : 12
PS C:\Users\LENOVO\Documents\modul1>
```

Perulangan for dengan range



The screenshot shows the Visual Studio Code interface with a Python file named `perulangan_for_range.py` open. The file contains a for loop that iterates over the range `range(5)` and prints the value of `hitung` for each iteration. The terminal output shows the execution of the script, resulting in the output `Hitung : 0`, `Hitung : 1`, `Hitung : 2`, `Hitung : 3`, and `Hitung : 4`.

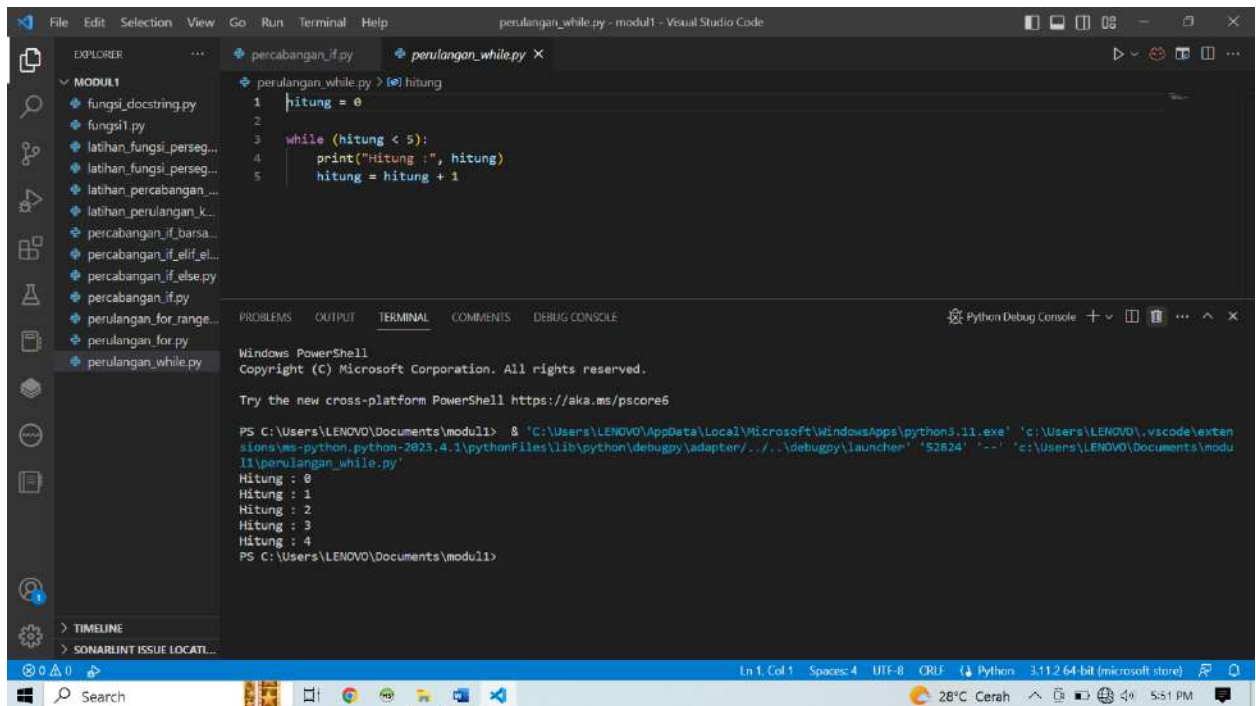
```
perulangan_for_range.py > ...
1 for hitung in range(5):
2     print("Hitung :", hitung)
```

```
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> & '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' '52812' '--' 'c:\Users\LENOVO\Documents\modul1\perulangan_for_range.py'
Hitung : 0
Hitung : 1
Hitung : 2
Hitung : 3
Hitung : 4
PS C:\Users\LENOVO\Documents\modul1>
```

2. Perulangan Menggunakan while



The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'perulangan_while.py' with the following Python code:

```
1 hitung = 0
2
3 while (hitung < 5):
4     print("Hitung :", hitung)
5     hitung = hitung + 1
```

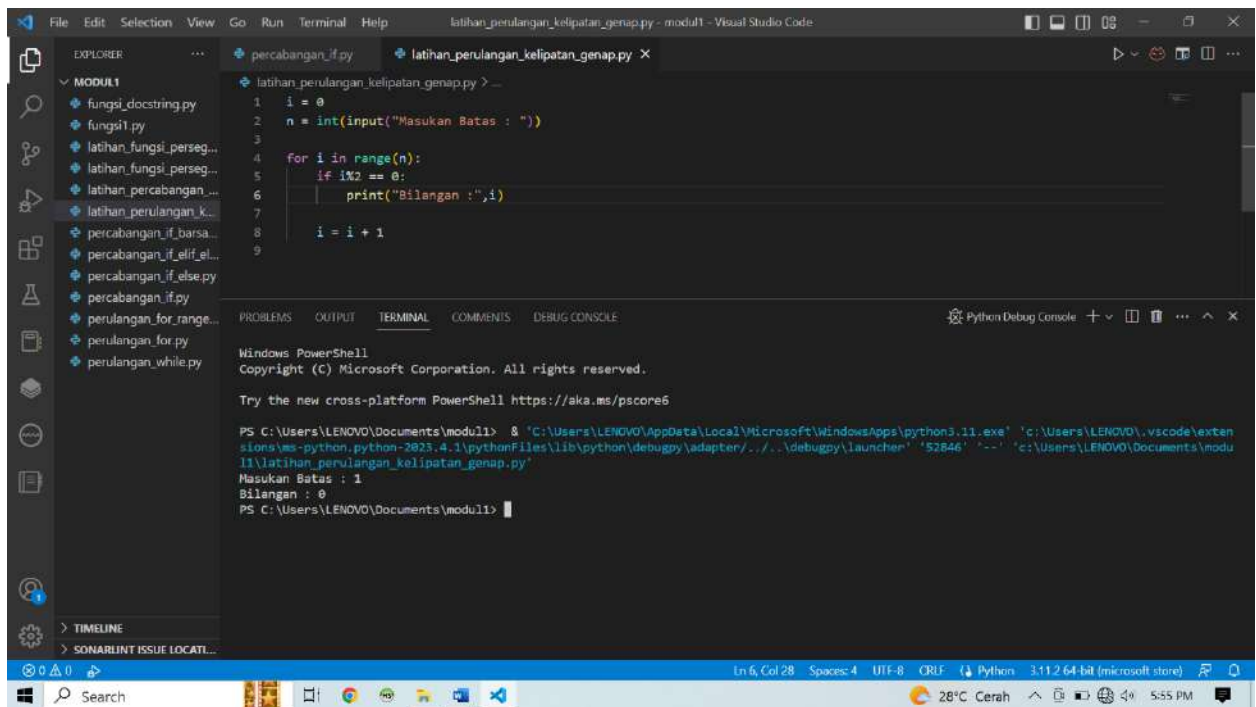
The bottom panel shows the 'TERMINAL' tab with the following output:

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

PS C:\Users\LENOVO\Documents\modul1> & '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' '52824' '--' 'c:\Users\LENOVO\Documents\modul1\perulangan_while.py'
Hitung : 0
Hitung : 1
Hitung : 2
Hitung : 3
Hitung : 4
PS C:\Users\LENOVO\Documents\modul1>
```

3. Contoh Program Kelipatan Bilangan Genap



The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'latihan_perulangan_kelipatan_genap.py' with the following Python code:

```
1 i = 0
2 n = int(input("Masukan Batas : "))
3
4 for i in range(n):
5     if i%2 == 0:
6         print("Bilangan :", i)
7
8     i = i + 1
9
```

The bottom panel shows the 'TERMINAL' tab with the following output:

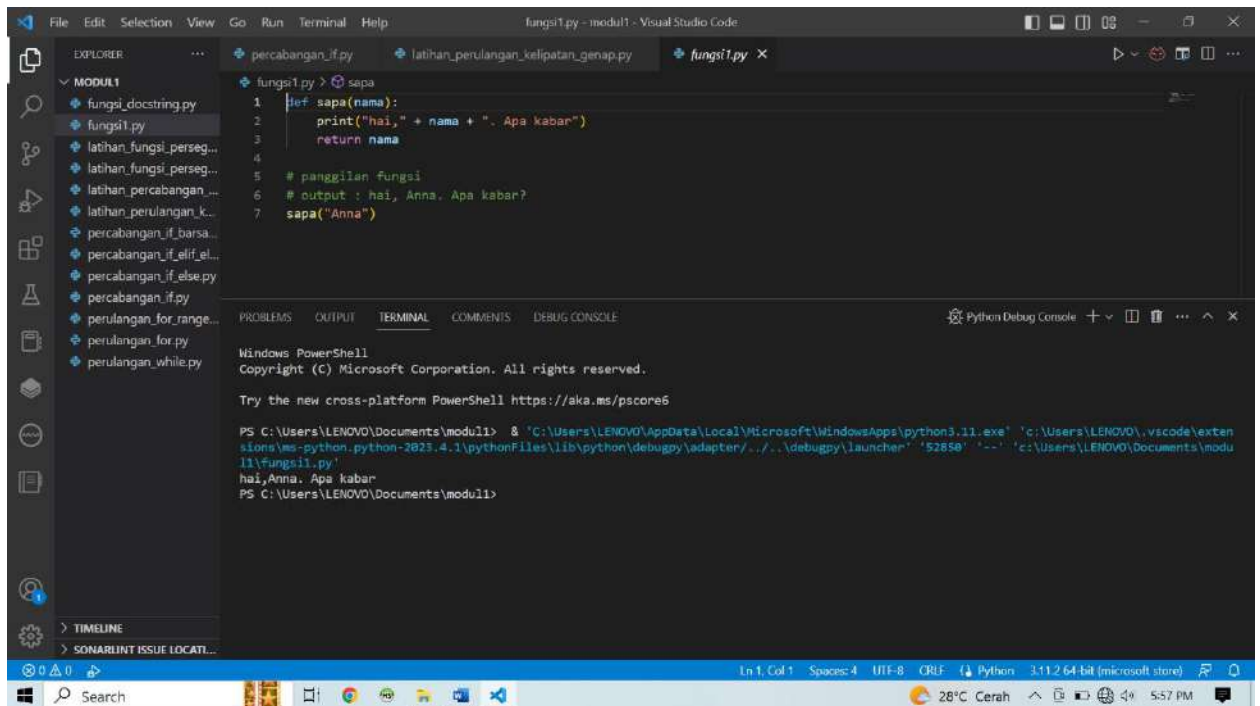
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\modul1> & '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' '52846' '--' 'c:\Users\LENOVO\Documents\modul1\latihan_perulangan_kelipatan_genap.py'
Masukan Batas : 1
Bilangan : 0
PS C:\Users\LENOVO\Documents\modul1>
```


Latihan

1. Mendefinisikan Fungsi



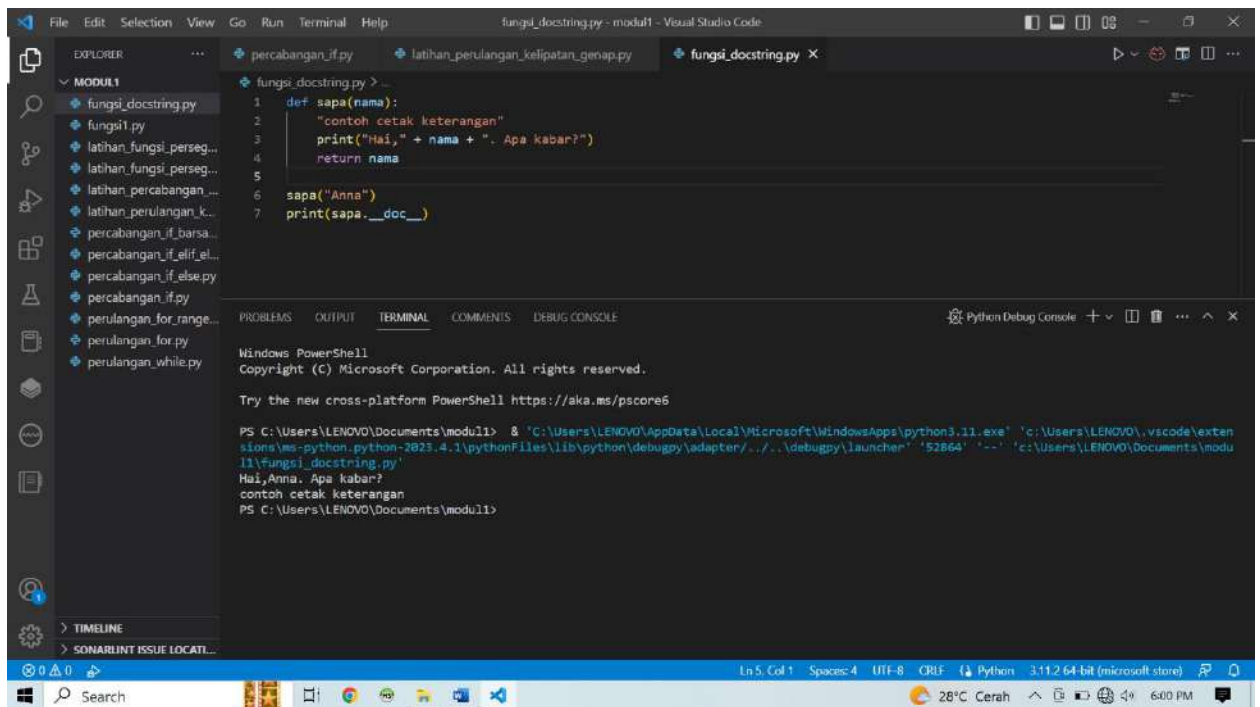
The screenshot shows the Visual Studio Code interface with a file explorer on the left containing various Python files. The main editor displays a file named `fungsi1.py` with the following code:

```
1 def sapa(nama):
2     print("hai," + nama + ". Apa kabar")
3     return nama
4
5 # panggilan fungsi
6 # output : hai, Anna. Apa kabar?
7 sapa("Anna")
```

The terminal at the bottom shows the execution of the script:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52850' '--' 'c:\Users\LENOVO\Documents\modul1\fungsi1.py'
hai,Anna. Apa kabar
PS C:\Users\LENOVO\Documents\modul1>
```

2. Docstring



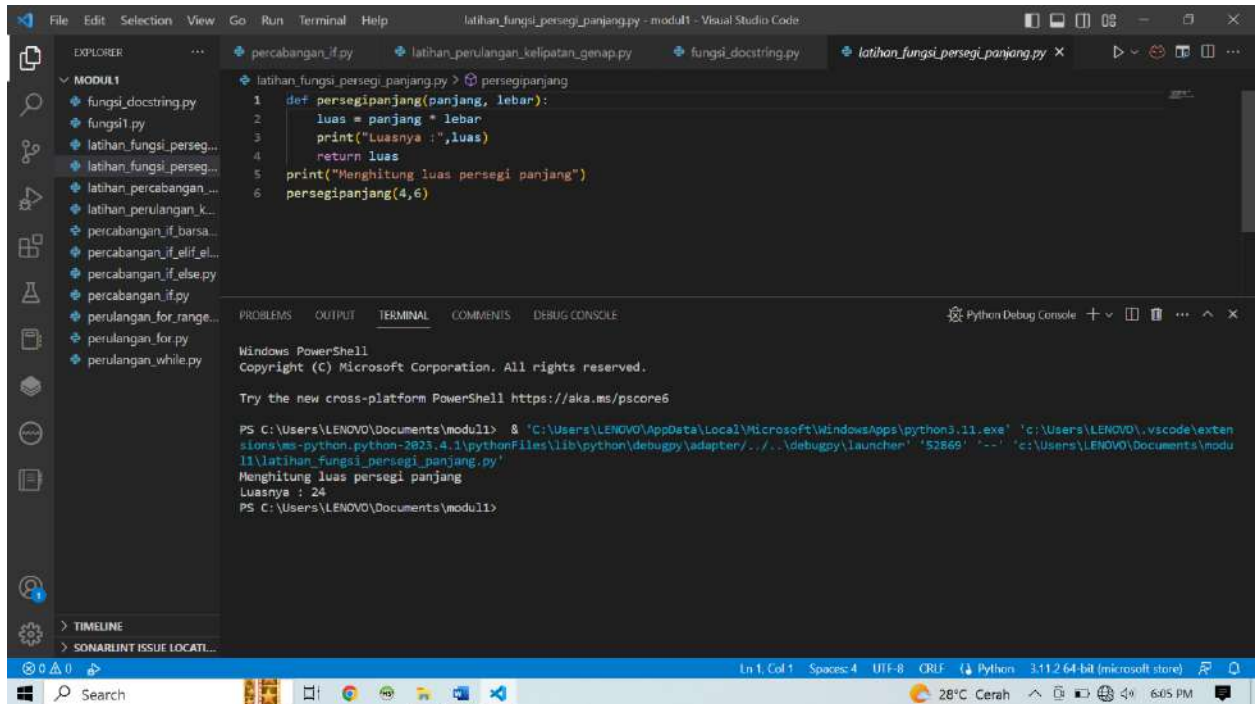
The screenshot shows the Visual Studio Code interface with a file explorer on the left. The main editor displays a file named `fungsi_docstring.py` with the following code:

```
1 def sapa(nama):
2     """contoh cetak keterangan"""
3     print("Hai," + nama + ". Apa kabar?")
4     return nama
5
6 sapa("Anna")
7 print(sapa.__doc__)
```

The terminal at the bottom shows the execution of the script:

```
PS C:\Users\LENOVO\Documents\modul1> & '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' '52864' '--' 'c:\Users\LENOVO\Documents\modul1\fungsi_docstring.py'
Hai,Anna. Apa kabar?
contoh cetak keterangan
PS C:\Users\LENOVO\Documents\modul1>
```

3. Contoh Program Luas Persegi Panjang dengan Fungsi



The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'latihan_fungsi_persegi_panjang.py' with the following Python code:

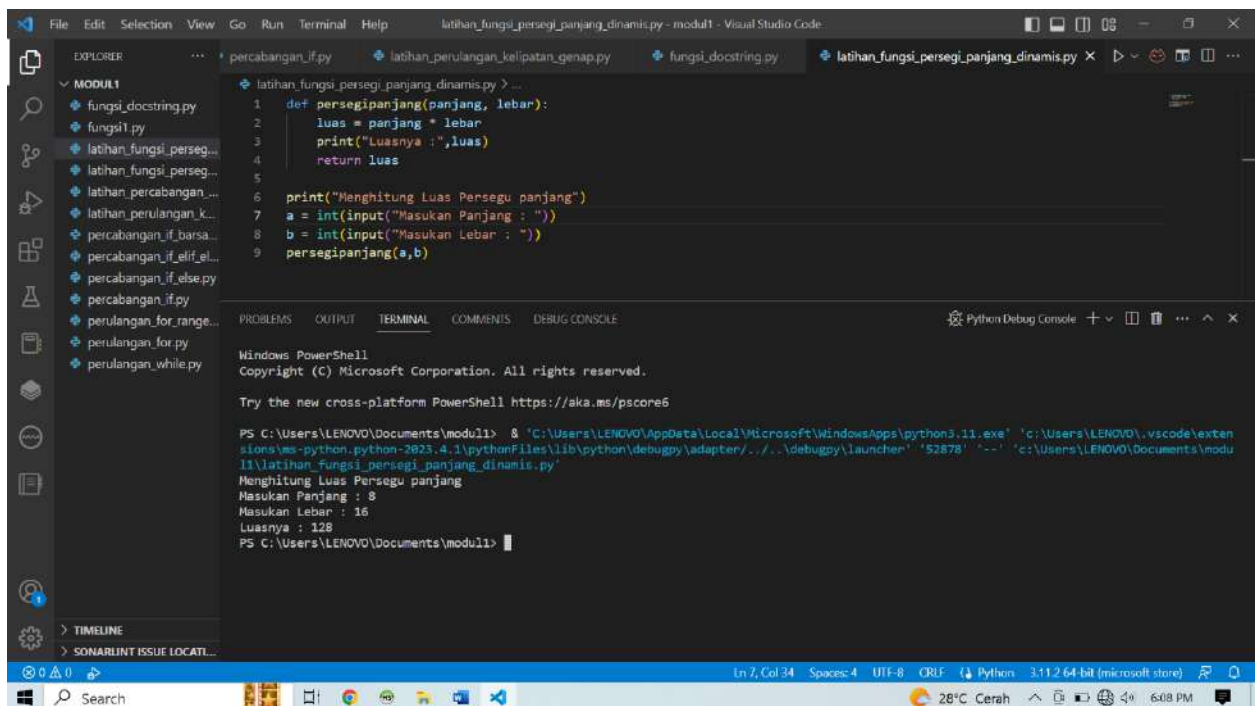
```
1 def persegipanjang(panjang, lebar):
2     luas = panjang * lebar
3     print("Luasnya :",luas)
4     return luas
5
6 print("Menghitung luas persegi panjang")
7 persegipanjang(4,6)
```

The bottom panel shows the 'TERMINAL' tab with the following output:

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

PS C:\Users\LENOVO\Documents\modul1> & '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' '52869' '--' 'c:\Users\LENOVO\Documents\modul1\latihan_fungsi_persegi_panjang.py'
Menghitung luas persegi panjang
Luasnya : 24
PS C:\Users\LENOVO\Documents\modul1>
```



The screenshot shows the Visual Studio Code interface with a file explorer on the left containing a folder named 'MODUL1'. The main editor displays a file named 'latihan_fungsi_persegi_panjang_dinamis.py' with the following Python code:

```
1 def persegipanjang(panjang, lebar):
2     luas = panjang * lebar
3     print("Luasnya :",luas)
4     return luas
5
6 print("Menghitung Luas Persegi panjang")
7 a = int(input("Masukan Panjang : "))
8 b = int(input("Masukan Lebar : "))
9 persegipanjang(a,b)
```

The bottom panel shows the 'TERMINAL' tab with the following output:

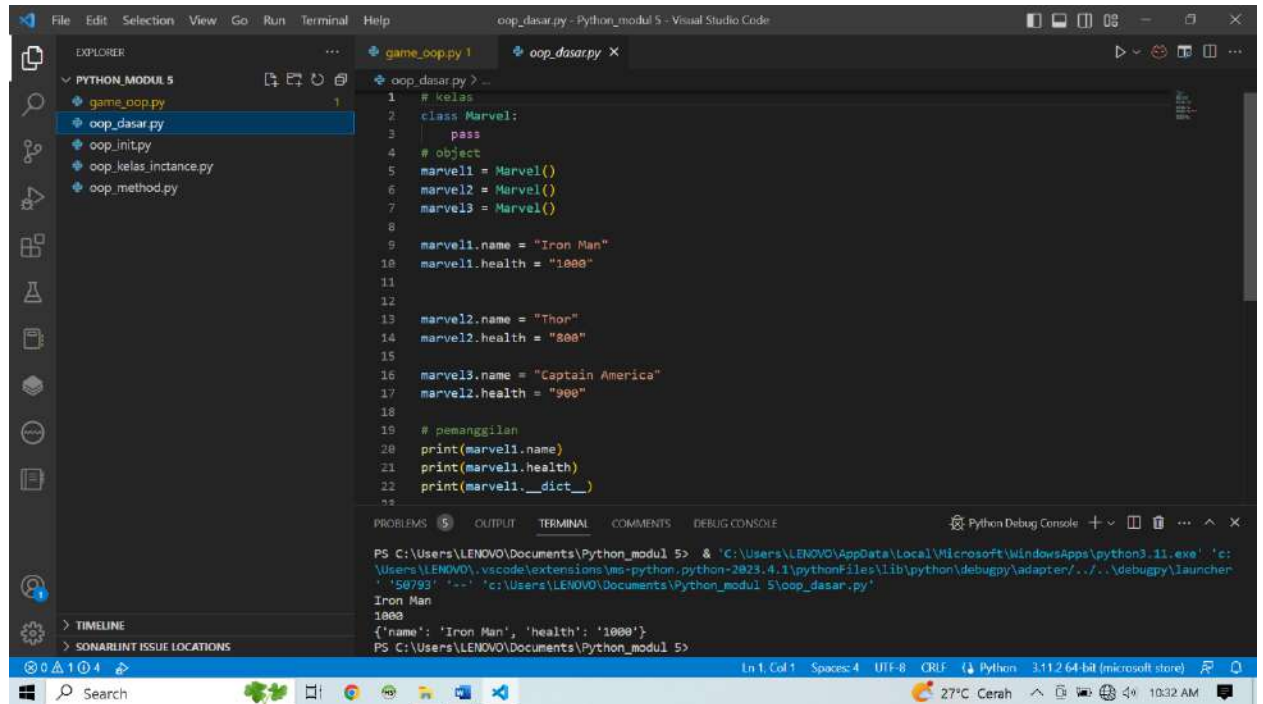
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\modul1> & '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' '52878' '--' 'c:\Users\LENOVO\Documents\modul1\latihan_fungsi_persegi_panjang_dinamis.py'
Menghitung Luas Persegi panjang
Masukan Panjang : 8
Masukan Lebar : 16
Luasnya : 128
PS C:\Users\LENOVO\Documents\modul1>
```

Python Modul 5

1. Perkenalan Kelas dan Object



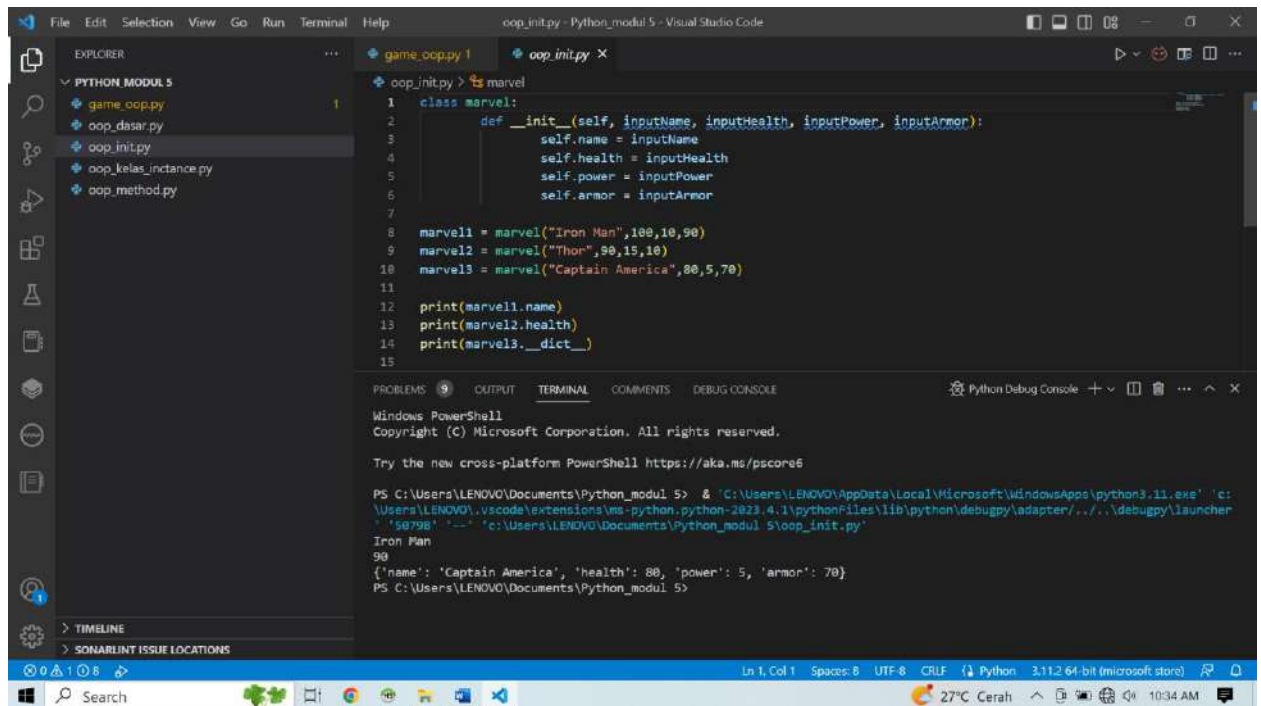
```
1 # kelas
2 class Marvel:
3     pass
4 # object
5 marvell1 = Marvel()
6 marvell2 = Marvel()
7 marvell3 = Marvel()
8
9 marvell1.name = "Iron Man"
10 marvell1.health = "1000"
11
12
13 marvell2.name = "Thor"
14 marvell2.health = "800"
15
16 marvell3.name = "Captain America"
17 marvell2.health = "900"
18
19 # pemanggilan
20 print(marvell1.name)
21 print(marvell1.health)
22 print(marvell1.__dict__)
23
```

PS C:\Users\LENOVO\Documents\Python_modul 5> & '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' '50792' '--' 'c:\Users\LENOVO\Documents\Python_modul 5\oop_dasar.py'

Iron Man
1000
{'name': 'Iron Man', 'health': '1000'}

PS C:\Users\LENOVO\Documents\Python_modul 5>

2. Kelas dan Object Sederhana



```
1 class marvel:
2     def __init__(self, inputName, inputHealth, inputPower, inputArmor):
3         self.name = inputName
4         self.health = inputHealth
5         self.power = inputPower
6         self.armor = inputArmor
7
8 marvell1 = marvel("Iron Man",100,10,90)
9 marvell2 = marvel("Thor",90,15,10)
10 marvell3 = marvel("Captain America",80,5,70)
11
12 print(marvell1.name)
13 print(marvell2.health)
14 print(marvell3.__dict__)
15
```

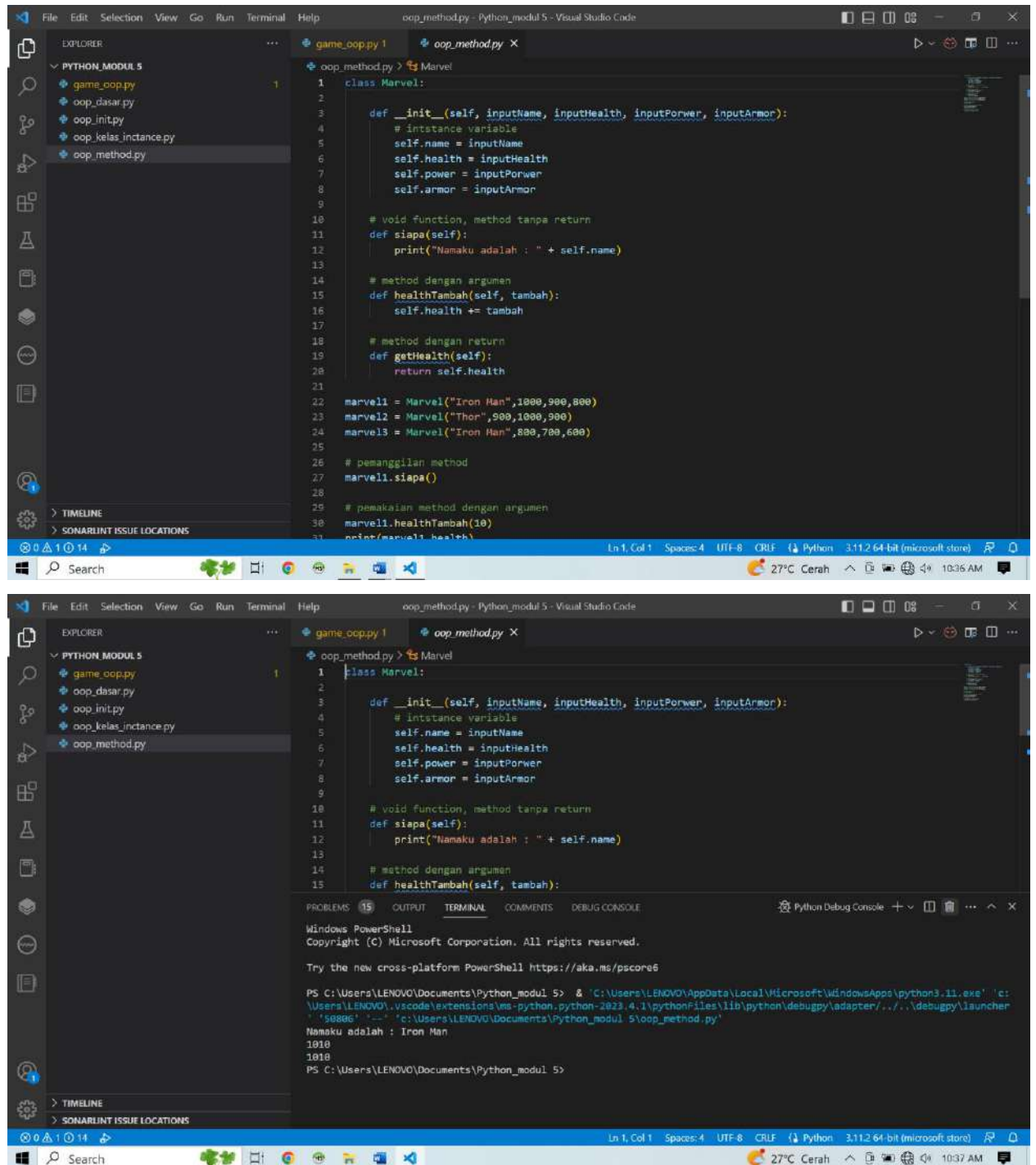
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\LENOVO\Documents\Python_modul 5> & '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' '50798' '--' 'c:\Users\LENOVO\Documents\Python_modul 5\oop_init.py'

Iron Man
90
{'name': 'Captain America', 'health': 80, 'power': 5, 'armor': 70}

PS C:\Users\LENOVO\Documents\Python_modul 5>

3. Method



The image displays two screenshots of a Visual Studio Code editor window, showing the development and execution of a Python program.

Top Screenshot: The editor shows a file named `oop_method.py` with the following Python code:

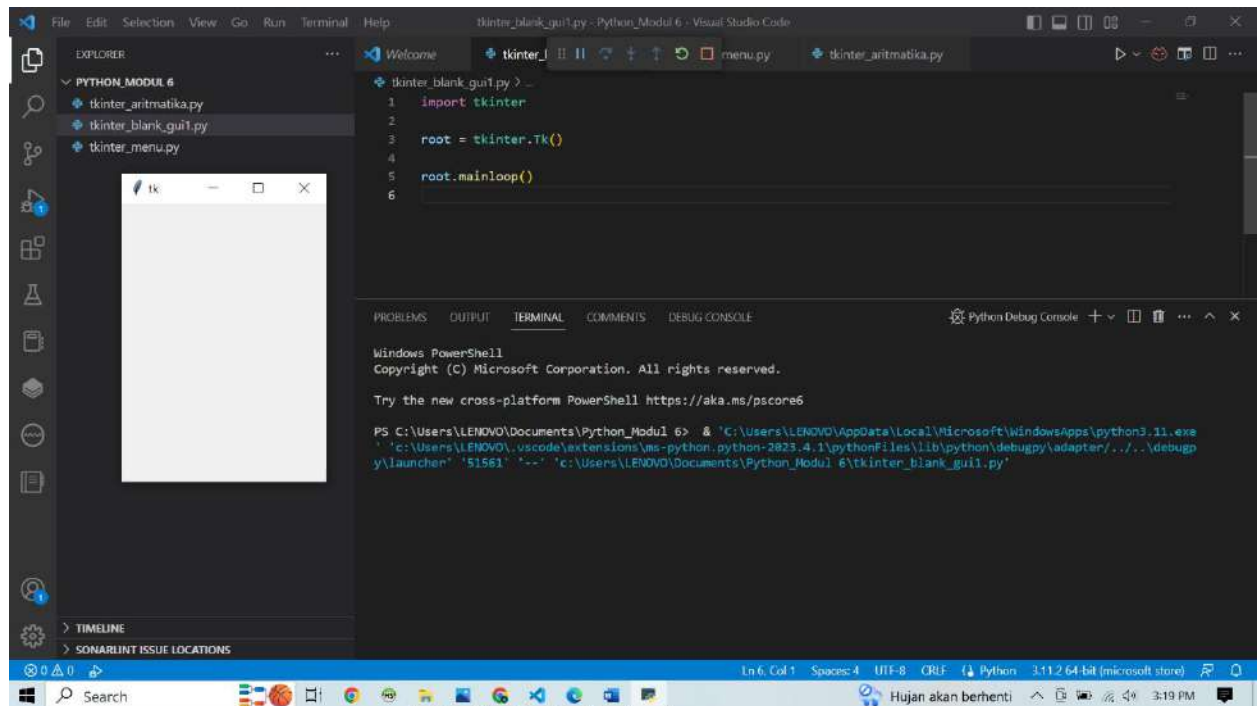
```
1 class Marvel:
2
3     def __init__(self, inputName, inputHealth, inputPower, inputArmor):
4         # instance variable
5         self.name = inputName
6         self.health = inputHealth
7         self.power = inputPower
8         self.armor = inputArmor
9
10    # void function, method tanpa return
11    def siapa(self):
12        print("Namaku adalah : " + self.name)
13
14    # method dengan argumen
15    def healthTambah(self, tambah):
16        self.health += tambah
17
18    # method dengan return
19    def getHealth(self):
20        return self.health
21
22    marvell = Marvel("Iron Man",1000,900,800)
23    marvel2 = Marvel("Thor",900,1000,900)
24    marvel3 = Marvel("Iron Man",800,700,600)
25
26    # pemanggilan method
27    marvell.siapa()
28
29    # pemakaian method dengan argumen
30    marvell.healthTambah(10)
31    print(marvell.health)
```

Bottom Screenshot: The editor shows the same code, but the terminal window is open, displaying the output of the program:

```
PS C:\Users\LENOVO\Documents\Python_modul 5> & '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' '50886' '-c' 'c:\Users\LENOVO\Documents\Python_modul 5\oop_method.py'
Namaku adalah : Iron Man
1010
1010
PS C:\Users\LENOVO\Documents\Python_modul 5>
```

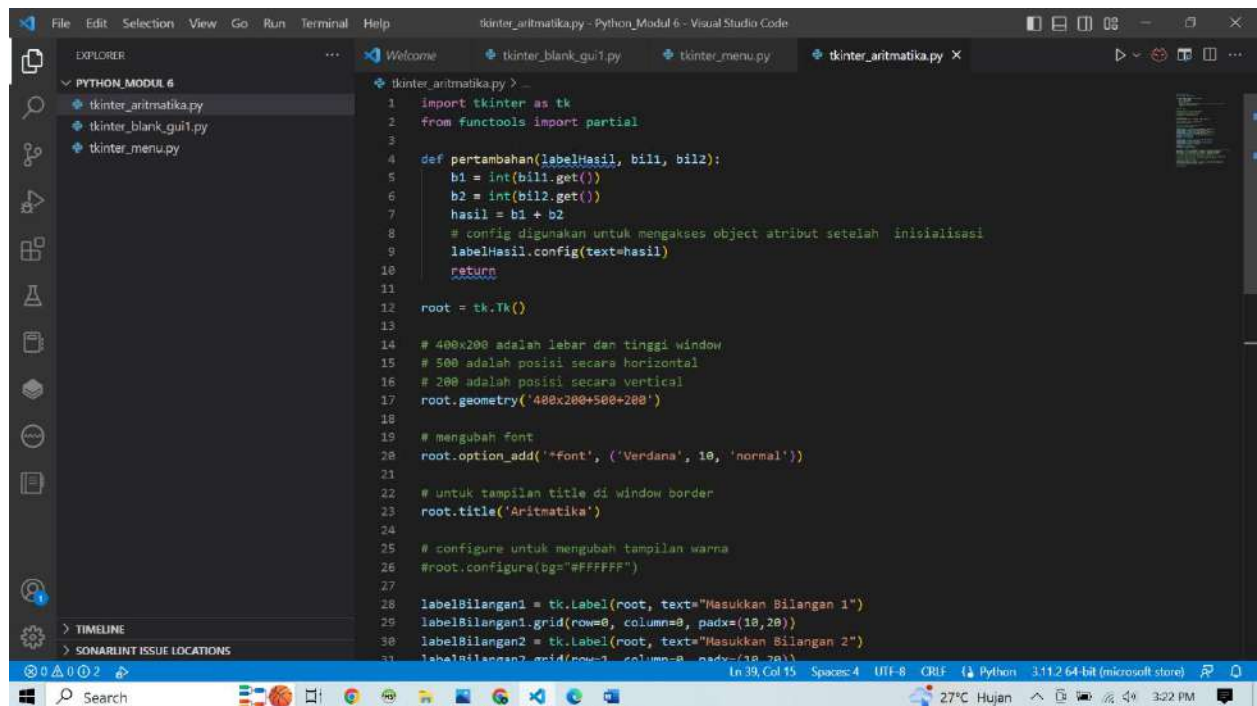
Python Modul 6

1. Tampilan GUI Sederhana

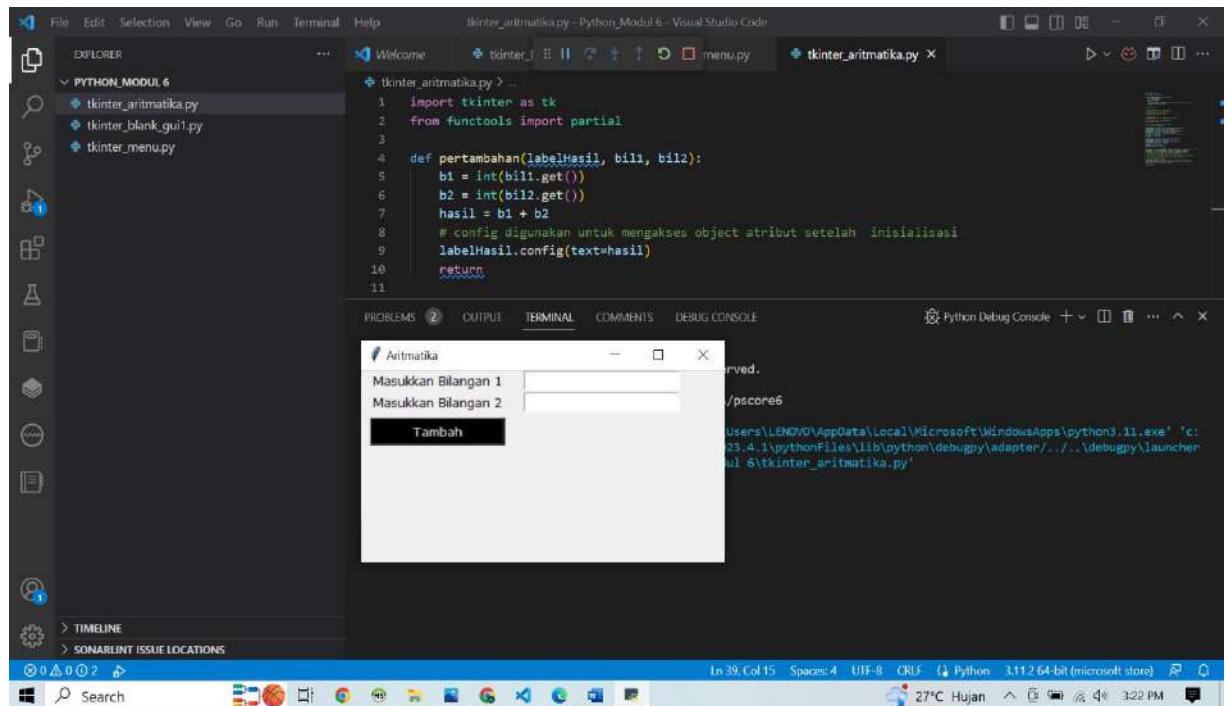


Kode Tampilan GUI sederhana dan gambat Tampilan GUI sederhana

2. Contoh Aplikasi Aritmatika Pertambahan

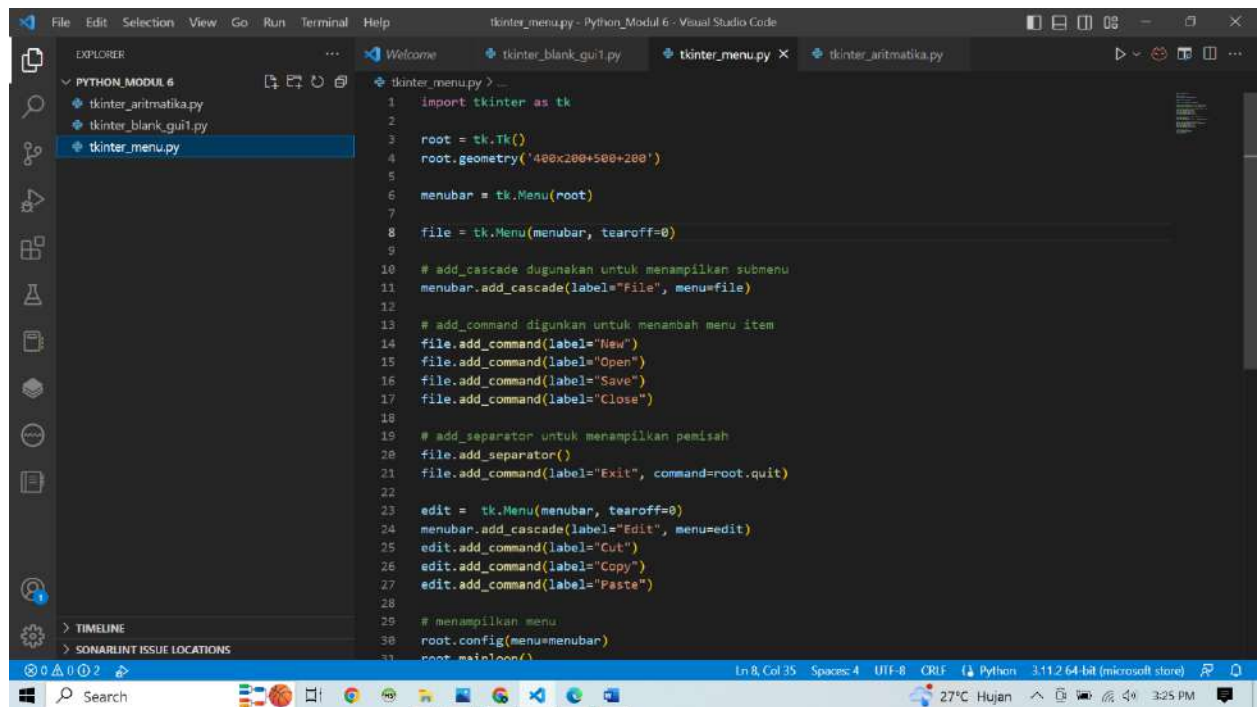


Kode Aplikasi Artimatika pertambahan

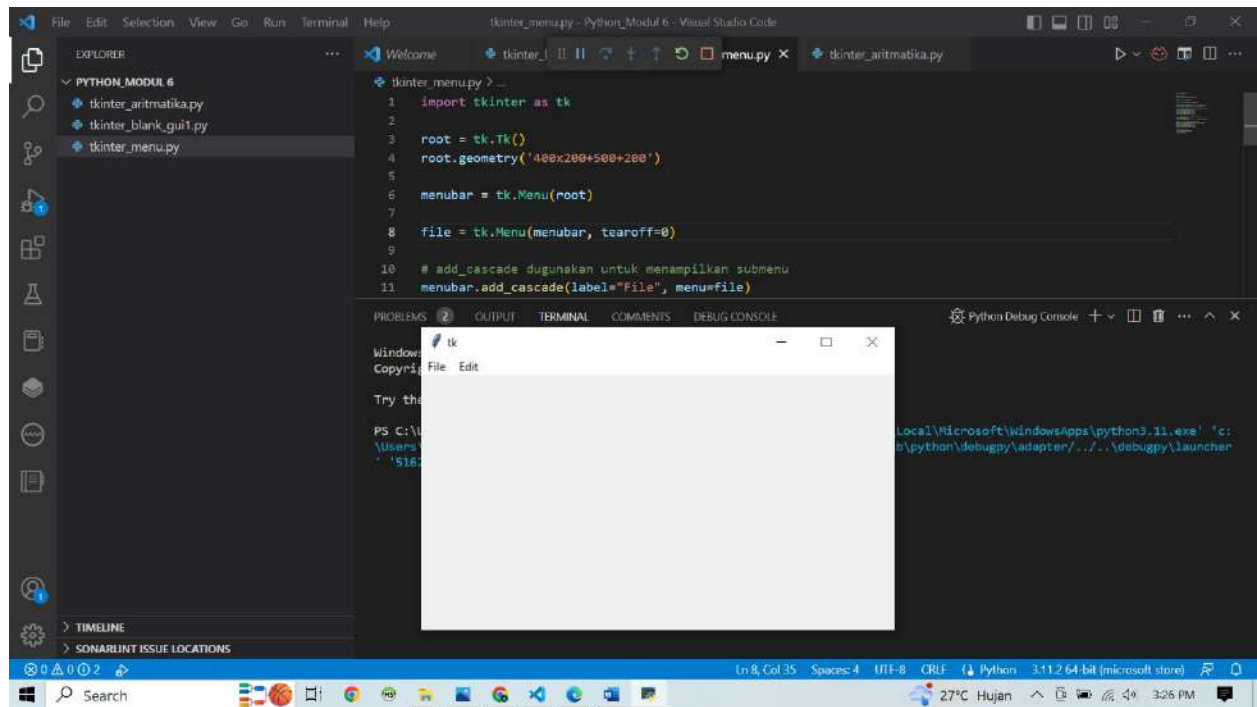


Gambar Aplikasi Aritmatika

3. Membuat Menu



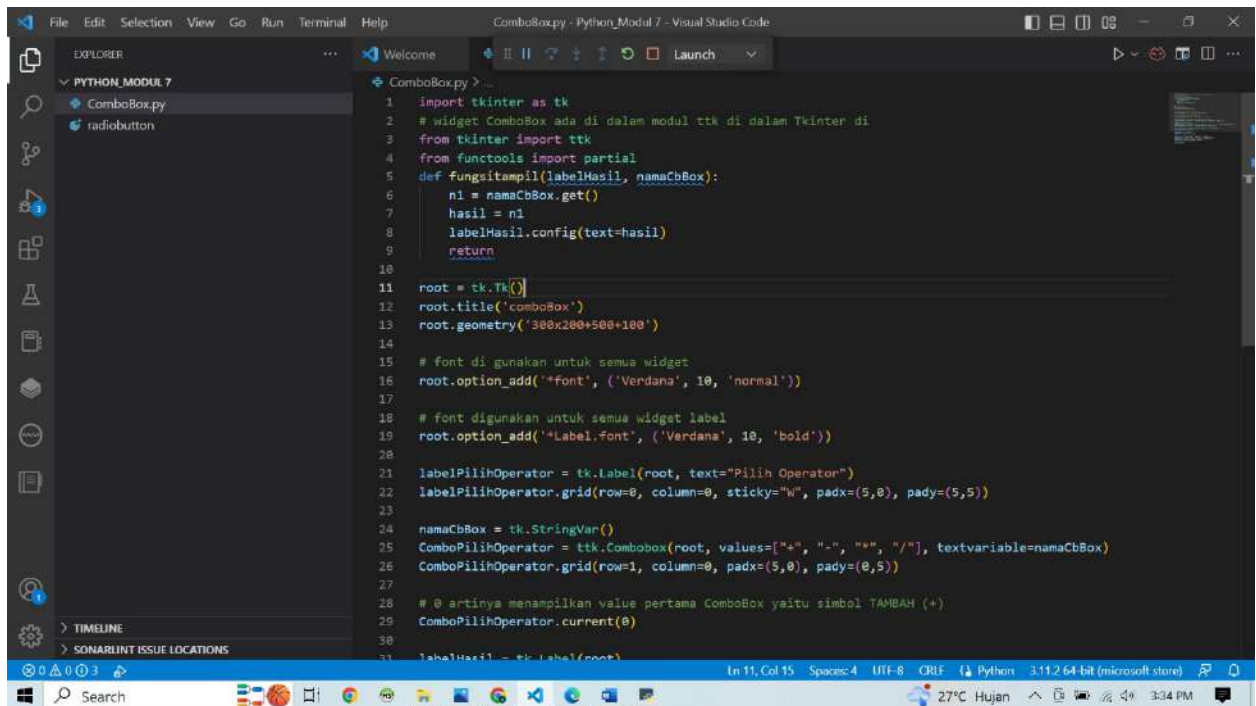
Kode Tampilan Menu



Gambar Tambilan Menu

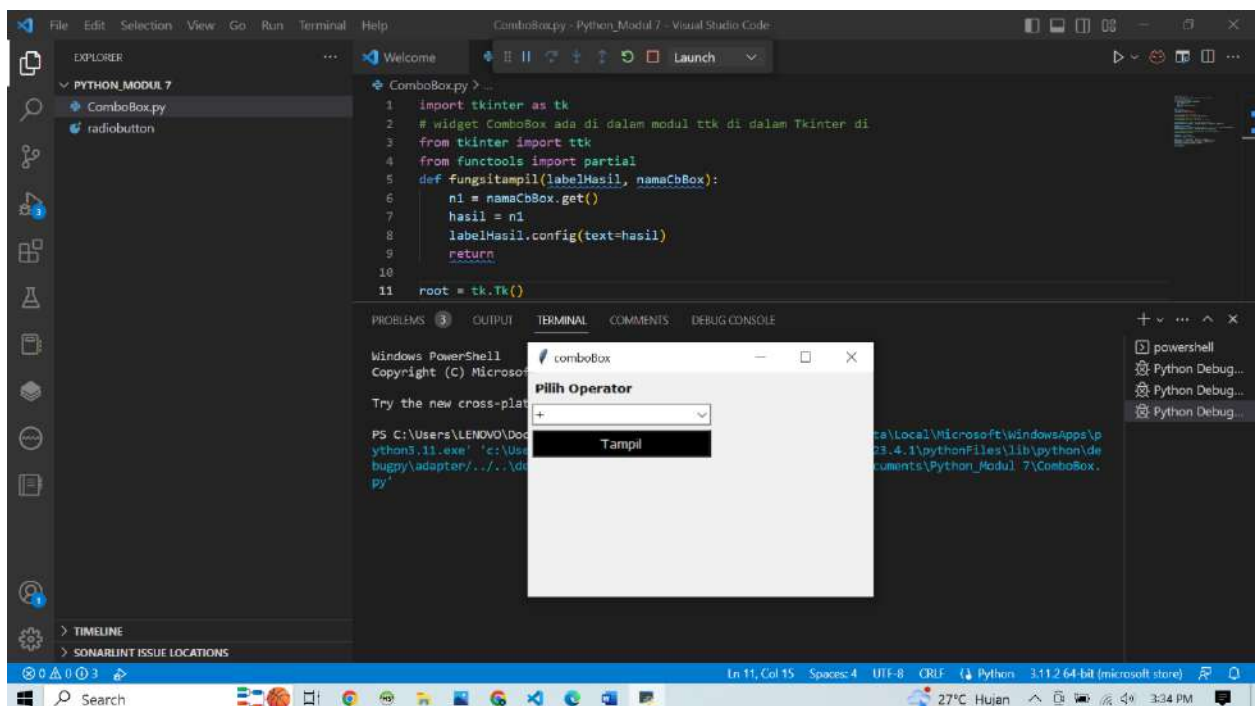
Python Modul 7

1. ComboBox



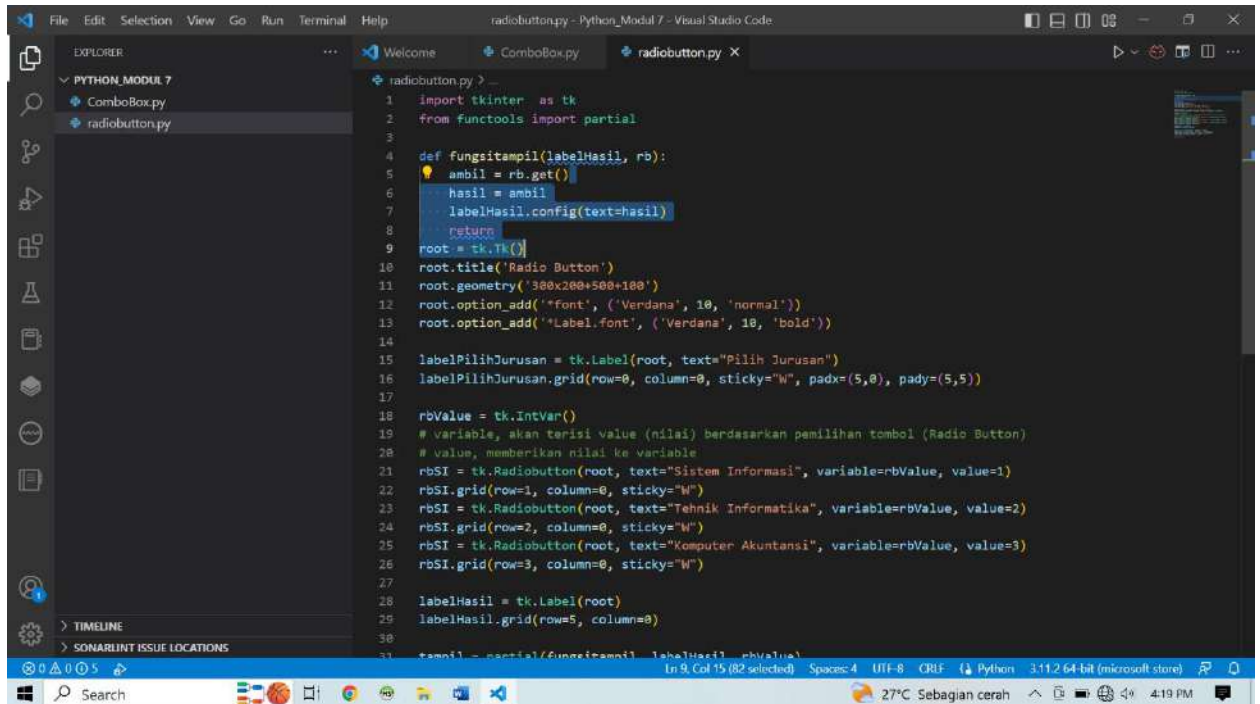
```
1 import tkinter as tk
2 # widget ComboBox ada di dalam modul ttk di dalam Tkinter di
3 from tkinter import ttk
4 from functools import partial
5 def fungsitampil(labelHasil, namaCbBox):
6     n1 = namaCbBox.get()
7     hasil = n1
8     labelHasil.config(text=hasil)
9     return
10
11 root = tk.Tk()
12 root.title('comboBox')
13 root.geometry('300x200+500+100')
14
15 # font di gunakan untuk semua widget
16 root.option_add('*font', ('Verdana', 10, 'normal'))
17
18 # font digunakan untuk semua widget label
19 root.option_add('*Label.font', ('Verdana', 10, 'bold'))
20
21 labelPilihOperator = tk.Label(root, text="Pilih Operator")
22 labelPilihOperator.grid(row=0, column=0, sticky="w", padx=(5,0), pady=(5,5))
23
24 namaCbBox = tk.StringVar()
25 ComboPilihOperator = ttk.Combobox(root, values=["+", "-", "*", "/"], textvariable=namaCbBox)
26 ComboPilihOperator.grid(row=1, column=0, padx=(5,0), pady=(0,5))
27
28 # @ artinya menampilkan value pertama ComboBox yaitu simbol TAMBAH (+)
29 ComboPilihOperator.current(0)
30
31 labelHasil = tk.Label(root)
```

Kode Tampilan ComboBox



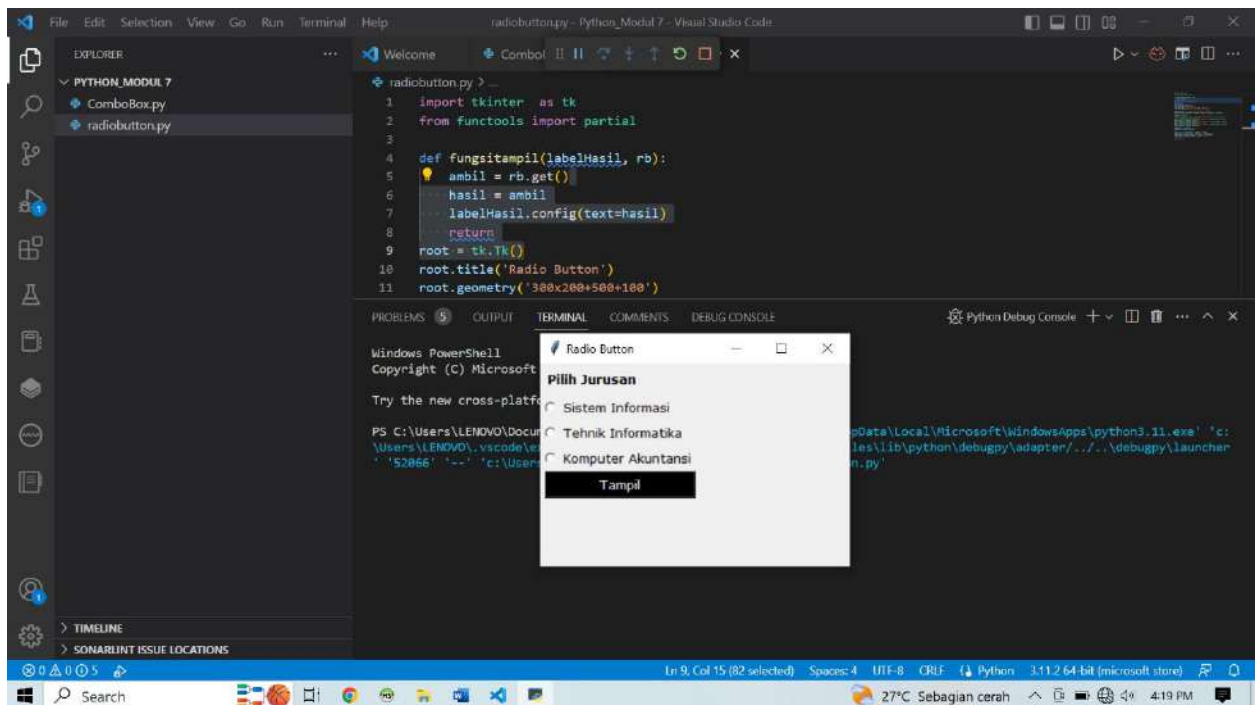
Tampilan ComboBox

2. RadioButton



```
1 import tkinter as tk
2 from functools import partial
3
4 def fungsitampil(labelHasil, rb):
5     ambil = rb.get()
6     hasil = ambil
7     labelHasil.config(text=hasil)
8     return
9
10 root = tk.Tk()
11 root.title('Radio Button')
12 root.geometry('300x200+500+100')
13 root.option_add('*font', ('Verdana', 10, 'normal'))
14 root.option_add('*Label.font', ('Verdana', 10, 'bold'))
15
16 labelPilihJurusan = tk.Label(root, text="Pilih Jurusan")
17 labelPilihJurusan.grid(row=0, column=0, sticky="W", padx=(5,0), pady=(5,5))
18
19 rbValue = tk.IntVar()
20 # variable, akan terisi value (nilai) berdasarkan pemilihan tombol (Radio Button)
21 # value, memberikan nilai ke variable
22 rbSI = tk.Radiobutton(root, text="Sistem Informasi", variable=rbValue, value=1)
23 rbSI.grid(row=1, column=0, sticky="W")
24 rbTI = tk.Radiobutton(root, text="Teknik Informatika", variable=rbValue, value=2)
25 rbTI.grid(row=2, column=0, sticky="W")
26 rbKA = tk.Radiobutton(root, text="Komputer Akuntansi", variable=rbValue, value=3)
27 rbKA.grid(row=3, column=0, sticky="W")
28
29 labelHasil = tk.Label(root)
30 labelHasil.grid(row=5, column=0)
```

Kode Tampilan RadioButton



Tampilan RadioButton