

**PRAKTIKUM ALGORITMA DAN
STRUKTUR DATA**

UTS



Disusun oleh:

DONI WAHYU SAPUTRO

L200200169

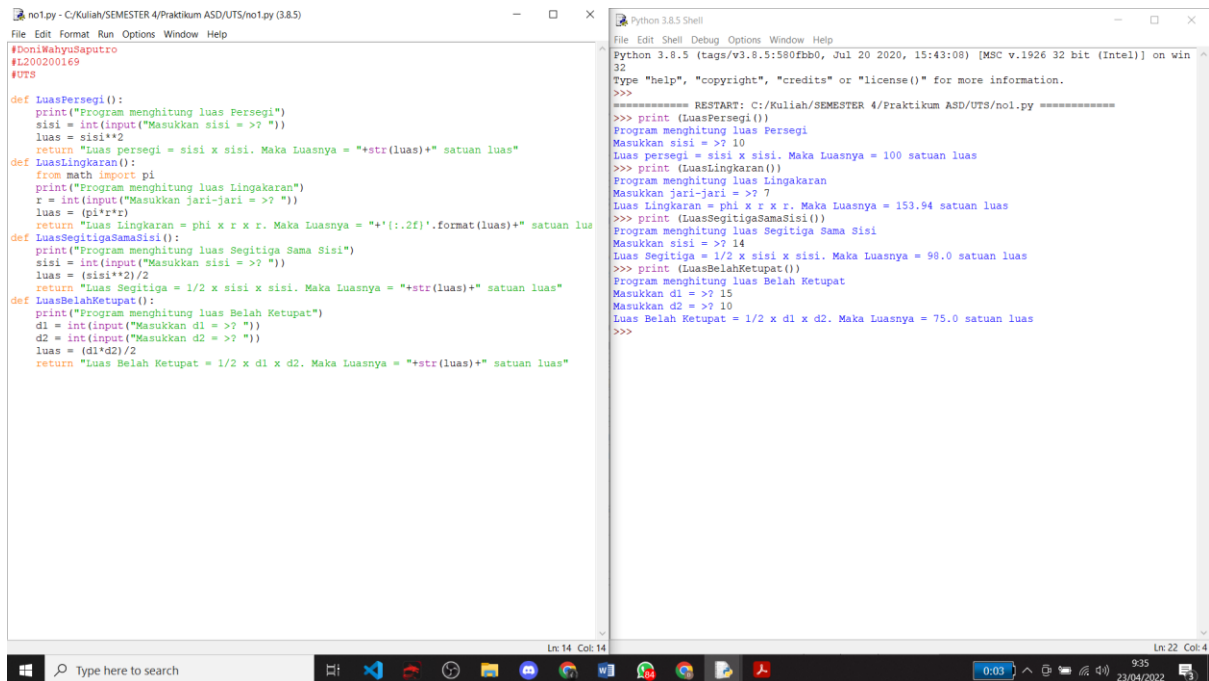
G

PROGRAM STUDI TEKNIK INFORMATIKA

FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

No1



```
no1.py - C:\Kuliah\SEMESTER 4\Praktikum ASD\UTS\no1.py (3.8.5)
File Edit Format Run Options Window Help
##DoniWahyuSaputro
##L200200169
##UTS

def LuasPersegi():
    print("Program menghitung luas Persegi")
    sisi = int(input("Masukkan sisi = >? "))
    luas = sisi**2
    return "Luas persegi = sisi x sisi. Maka Luasnya = "+str(luas)+" satuan luas"

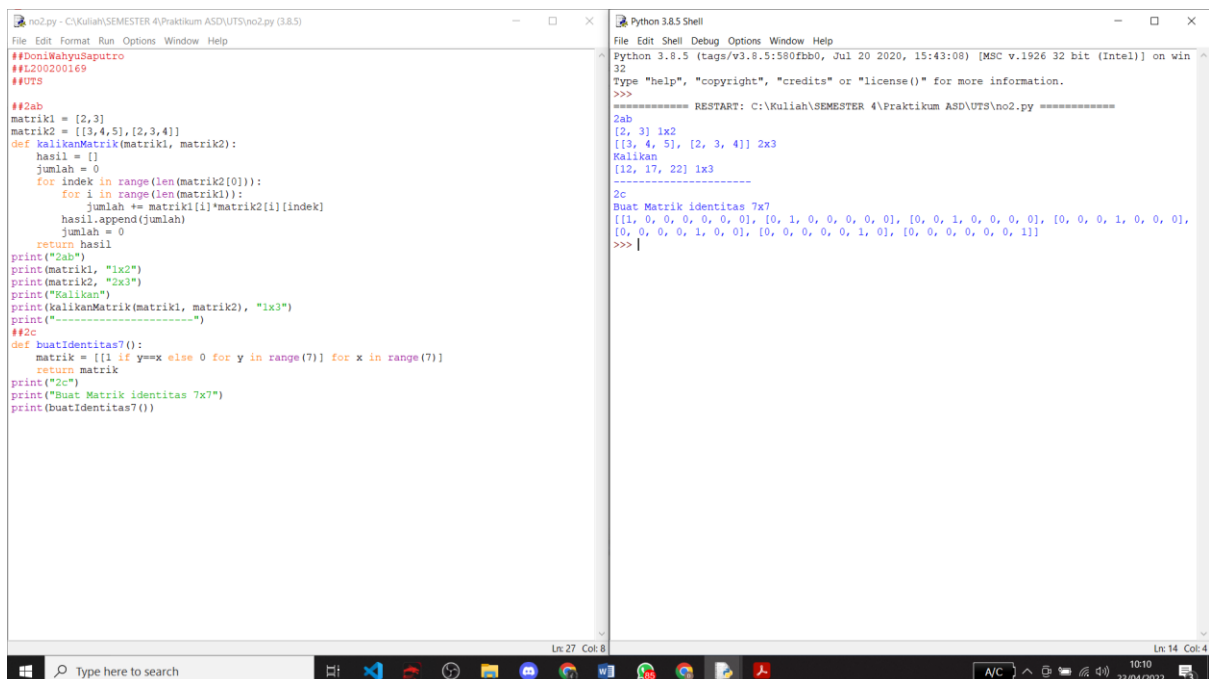
def LuasLingkaran():
    from math import pi
    print("Program menghitung luas Lingkaran")
    r = int(input("Masukkan jari-jari = >? "))
    luas = (pi*r**2)
    return "Luas lingkaran = phi x r x r. Maka Luasnya = "+str(luas)+" satuan luas"

def LuasSegitigaSamaSisi():
    print("Program menghitung luas Segitiga Sama Sisi")
    sisi = int(input("Masukkan sisi = >? "))
    luas = (sisi**2)/2
    return "Luas Segitiga = 1/2 x sisi x sisi. Maka Luasnya = "+str(luas)+" satuan luas"

def LuasBelahKetupat():
    print("Program menghitung luas Belah Ketupat")
    d1 = int(input("Masukkan d1 = >? "))
    d2 = int(input("Masukkan d2 = >? "))
    luas = (d1*d2)/2
    return "Luas Belah Ketupat = 1/2 x d1 x d2. Maka Luasnya = "+str(luas)+" satuan luas"

Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Kuliah\SEMESTER 4\Praktikum ASD\UTS\no1.py =====
>>> print (LuasPersegi())
Program menghitung luas Persegi
Masukkan sisi = >? 10
Luas persegi = sisi x sisi. Maka Luasnya = 100 satuan luas
>>> print (LuasLingkaran())
Program menghitung luas Lingkaran
Masukkan jari-jari = >? 7
Luas lingkaran = phi x r x r. Maka Luasnya = 153.94 satuan luas
>>> print (LuasSegitigaSamaSisi())
Program menghitung luas Segitiga Sama Sisi
Masukkan sisi = >? 14
Luas Segitiga = 1/2 x sisi x sisi. Maka Luasnya = 98.0 satuan luas
>>> print (LuasBelahKetupat())
Program menghitung luas Belah Ketupat
Masukkan d1 = >? 15
Masukkan d2 = >? 10
Luas Belah Ketupat = 1/2 x d1 x d2. Maka Luasnya = 75.0 satuan luas
>>>
```

No2



```
no2.py - C:\Kuliah\SEMESTER 4\Praktikum ASD\UTS\no2.py (3.8.5)
File Edit Format Run Options Window Help
##DoniWahyuSaputro
##L200200169
##UTS

##2ab
matrik1 = [2,3]
matrik2 = [[3,4,5],[2,3,4]]
def kalikanMatrik(matrik1, matrik2):
    hasil = []
    jumlah = 0
    for indeks in range(len(matrik2[0])):
        for i in range(len(matrik1)):
            jumlah += matrik1[i]*matrik2[i][indeks]
            hasil.append(jumlah)
            jumlah = 0
    return hasil
print("2ab")
print(matrik1, "1x2")
print(matrik2, "2x3")
print("2alikan")
print(kalikanMatrik(matrik1, matrik2), "1x3")
print("-----")

##2c
def buatIdentitas7():
    matrik = [[1 if y==x else 0 for y in range(7)] for x in range(7)]
    return matrik
print("2c")
print("Buat Matrik identitas 7x7")
print(buatIdentitas7())

Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Kuliah\SEMESTER 4\Praktikum ASD\UTS\no2.py =====
2ab
[2, 3] 1x2
[[3, 4, 5], [2, 3, 4]] 2x3
2alikan
[12, 17, 22] 1x3
-----
2c
Buat Matrik identitas 7x7
[[1, 0, 0, 0, 0, 0, 0], [0, 1, 0, 0, 0, 0, 0], [0, 0, 1, 0, 0, 0, 0], [0, 0, 0, 1, 0, 0, 0], [0, 0, 0, 0, 1, 0, 0], [0, 0, 0, 0, 0, 1, 0], [0, 0, 0, 0, 0, 0, 1]]
>>>
```

No3

```
no3.py - C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no3.py (3.8.5)
File Edit Format Run Options Window Help
##DoniWahyuSaputro
##L200200169
##UTS

class Orang():
    def __init__(self, nama, umur, kulit):
        self.nama = nama
        self.umur = umur
        self.kulit = kulit
    def __str__(self):
        return str(self.nama)+" "+str(self.umur)+" "+str(self.kulit)

data1 = Orang("Paijo",30,"Sawo Matang")
data2 = Orang("Badang",33,"Kuning Langsat")
data3 = Orang("Bus",35,"Putih")
data4 = Orang("Dzoky",18,"Sawo Matang")
data5 = Orang("Akbar",27,"Kuning Langsat")
data6 = Orang("Doni",23,"Putih")
data7 = Orang("Tatang",21,"Kuning Langsat")
data8 = Orang("Painem",40,"Sawo Matang")
data9 = Orang("Yetno",44,"Kuning Langsat")
data10 = Orang("Datmiko",32,"Putih")

data = [data1,data2,data3,data4,data5,data6,data7,data8,data9,data10]

for i in data:
    print(i)

Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no3.py =====
Paijo 30 Sawo Matang
Badang 33 Kuning Langsat
Bus 35 Putih
Dzoky 18 Sawo Matang
Akbar 27 Kuning Langsat
Doni 23 Putih
Tatang 21 Kuning Langsat
Painem 40 Sawo Matang
Yetno 44 Kuning Langsat
Jatmiko 32 Putih
>>>
```

No4

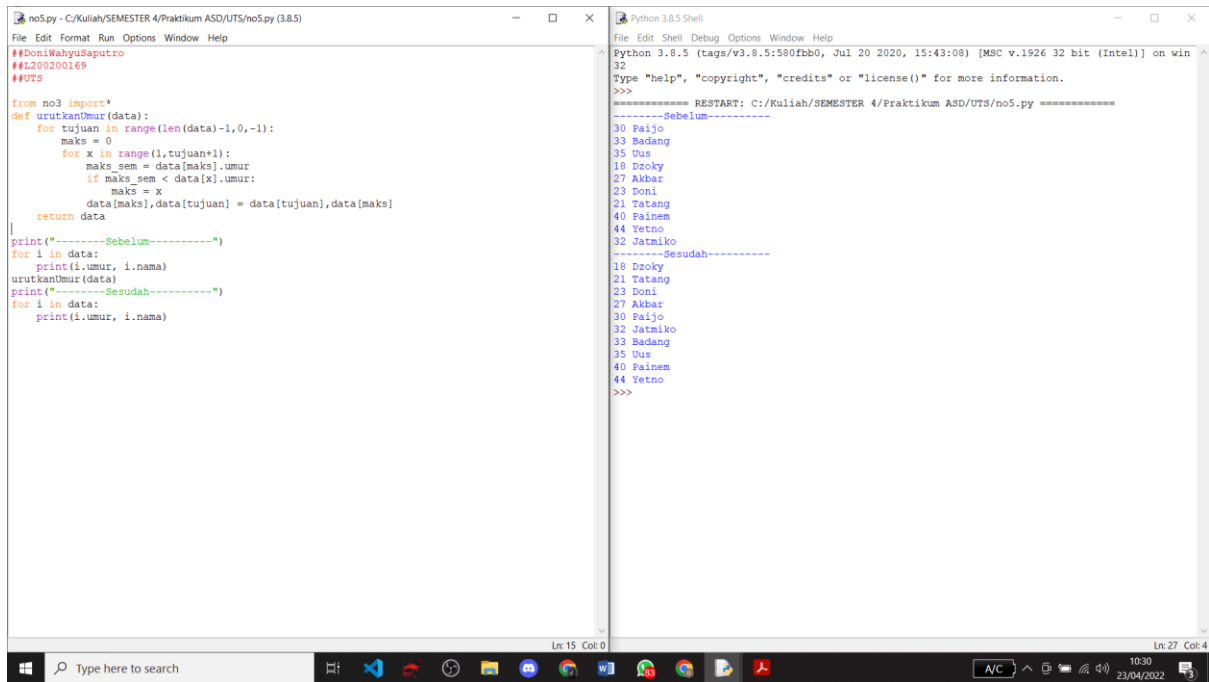
```
no4.py - C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no4.py (3.8.5)
File Edit Format Run Options Window Help
##DoniWahyuSaputro
##L200200169
##UTS

from no3 import*
def cetakKulit(data, warna):
    for i in data:
        if i.kulit == warna:
            print(i.nama, "warna kulit", i.kulit)
    return True

cetakKulit(data, "Sawo Matang")

Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no4.py =====
>>>
===== RESTART: C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no4.py =====
Paijo warna Sawo Matang
Dzoky warna Sawo Matang
Painem warna Sawo Matang
>>>
===== RESTART: C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no4.py =====
Paijo warna kulit Sawo Matang
Dzoky warna kulit Sawo Matang
Painem warna kulit Sawo Matang
>>>
```

No5



```
no5.py - C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no5.py (3.8.5)
File Edit Format Run Options Window Help
##DoniWahyuSaputro
##L200200169
##UTS

from no3 import*
def urutkanUmur(data):
    for tujuan in range(len(data)-1,0,-1):
        maks = 0
        for x in range(1,tujuan+1):
            maks_sem = data[maks].umur
            if maks_sem < data[x].umur:
                maks = x
            data[maks],data[tujuan] = data[tujuan],data[maks]
        return data
|
print("-----Sebelum-----")
for i in data:
    print(i.umur, i.nama)
urutkanUmur(data)
print("-----Sesudah-----")
for i in data:
    print(i.umur, i.nama)

Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:43:08) [MSC v.1926 32 bit (Intel)] on win
32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Kuliah/SEMESTER 4/Praktikum ASD/UTS/no5.py =====
-----Sebelum-----
30 Paijo
33 Badang
35 Uus
18 Dzoky
27 Akbar
23 Doni
21 Tatang
40 Painem
44 Yetno
32 Jatmiko
-----Sesudah-----
18 Dzoky
21 Tatang
23 Doni
27 Akbar
30 Paijo
32 Jatmiko
33 Badang
35 Uus
40 Painem
44 Yetno
>>>
```