**Virliana Annida Rekkayushar**

**L200180017**

**A**

# UTS

## Praktikum Algoritma Struktur dan Data

## No 1

## a,b,c,d,e

balok.py - C:/Users/Vian/Documents/prakalgostruk/UTS/balok.py (3.8.2)

File Edit Format Run Options Window Help

```
p = int(input('Masukan panjang balok: '))
l = int(input('Masukan lebar balok: '))
t = int(input('Masukan tinggi balok: '))
luas = 2 * ( (p*l) + (p*t) + (l*t) )
print("Luas balok adalah : "+ str(luas))
```

tabung.py - C:/Users/Vian/Documents/prakalgostruk/UTS/tabung.py (3.8.2)

File Edit Format Run Options Window Help

```
phi = 3.14
t = int(input("Masukan tinggi tabung : "))
r = int(input("Masukan jari-jari tabung : "))
luas = int(2*phi*r*(t+r))
print("Luas tabung adalah : "+ str(luas))
```

lingkaran.py - C:/Users/Vian/Documents/prakalgostruk/UTS/lingkaran.py (3.8.2)

File Edit Format Run Options Window Help

```
phi = 3.14
r = float(input("Masukkan panjang jari-jari lingkaran: "))
luas = phi*r*r
print("Luas lingkaran adalah : "+ str(luas))
```

segitiga sama sisi.py - C:/Users/Vian/Documents/prakalgostruk/UTS/segitiga sama sisi.py

File Edit Format Run Options Window Help

```
a = float(input("Masukkan panjang alas segitiga: "))
t = float(input("Masukkan tinggi segitiga: "))
luas = 0.5*a*t
print("Luas segitiga adalah : "+ str(luas))
```

belah ketupat.py - C:/Users/Vian/Documents/prakalgostruk/UTS/belah ketupat.py (3.8.2)

File Edit Format Run Options Window Help

```
d1 = float(input("Masukkan diagonal 1: "))
d2 = float(input("Masukkan diagonal 2: "))
luas=(d1*d2)/2
print("Luas belah ketupat adalah : "+ str(luas))
```

Python 3.8.2 Shell

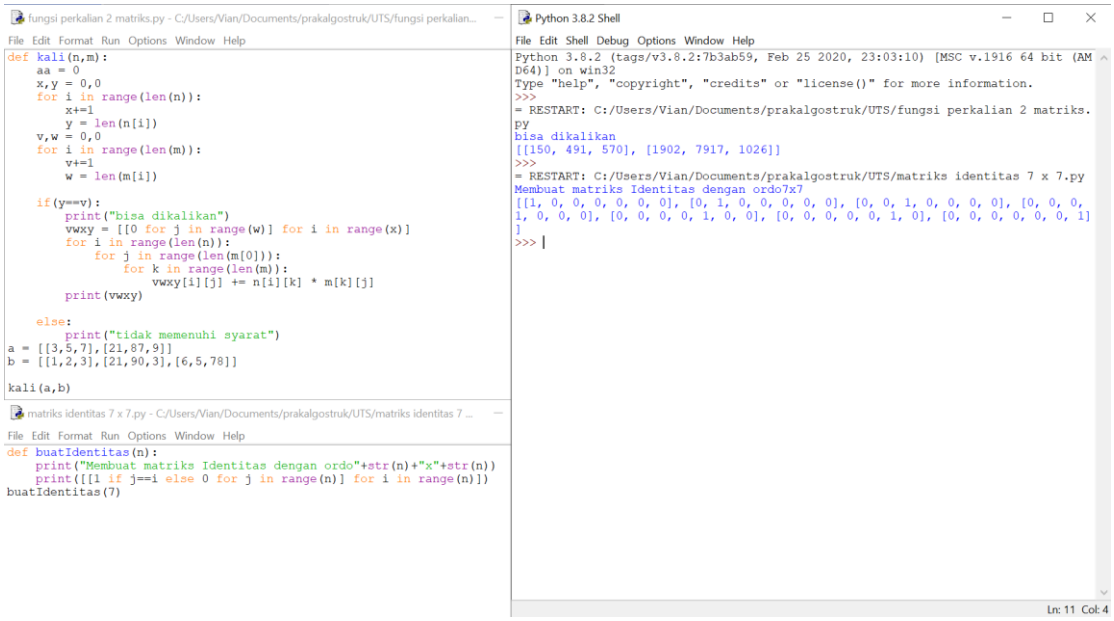
File Edit Shell Debug Options Window Help

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/balok.py =========
Masukan panjang balok: 4
Masukan lebar balok: 5
Masukan tinggi balok: 6
Luas balok adalah : 148
>>>
========= RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/tabung.py =========
Masukan tinggi tabung : 7
Masukan jari-jari tabung : 3
Luas tabung adalah : 188
>>>
======== RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/lingkaran.py =======
Masukkan panjang jari-jari lingkaran: 21
Luas lingkaran adalah : 1384.74
>>>
=== RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/segitiga sama sisi.py ===
Masukkan panjang alas segitiga: 8
Masukkan tinggi segitiga: 7
Luas segitiga adalah : 28.0
>>>
====== RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/belah ketupat.py =====
Masukkan diagonal 1: 8
Masukkan diagonal 2: 7
Luas belah ketupat adalah : 28.0
>>>
```

Ln: 28 Col: 4

## No 2

## a,b


fungsi perkalian 2 matriks.py - C:/Users/Vian/Documents/prakalgostruk/UTS/fungsi perkalian...
File Edit Format Run Options Window Help
def kali(n,m):
aa = 0
x,y = 0,0
for i in range(len(n)):
x+=1
y = len(n[i])
v,w = 0,0
for i in range(len(m)):
v+=1
w = len(m[i])
if(y==v):
print("bisa dikalikan")
vwxy = [[0 for j in range(w)] for i in range(x)]
for i in range(len(n)):
for j in range(len(m[0])):
for k in range(len(m)):
vwxy[i][j] += n[i][k] * m[k][j]
print(vwxy)
else:
print("tidak memenuhi syarat")
a = [[3,5,7],[21,87,9]]
b = [[1,2,3],[21,90,3],[6,5,78]]
kali(a,b)
matriks identitas 7 x 7.py - C:/Users/Vian/Documents/prakalgostruk/UTS/matriks identitas 7 ...
File Edit Format Run Options Window Help
def buatIdentitas(n):
print("Membuat matriks Identitas dengan ordo"+str(n)+"x"+str(n))
print([[1 if j==i else 0 for j in range(n)] for i in range(n)])
buatIdentitas(7)
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/fungsi perkalian 2 matriks.py
bisa dikalikan
[[150, 491, 570], [1902, 7917, 1026]]
>>>
= RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/matriks identitas 7 x 7.py
Membuat matriks Identitas dengan ordo7x7
[[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]]
>>>
Ln: 11 Col: 4

# No 3

algoritma pencarian1.py - C:/Users/Vian/Documents/prakalgostruk/UTS/algoritma pencaria...

File Edit Format Run Options Window Help

```
class Mahasiswa():
    def __init__(self,NIM,nama,kota,jr, ipk):
        self.NIM = NIM
        self.nama = nama
        self.kotatinggal =kota
        self.jurusan = jr
        self.ipk = ipk
    def __str__(self):
        s = "NIM"+ str(self.NIM)\
            + self.nama \
            +",tinggal di" + self.kotatinggal \
            +",jurusan" + str(self.jurusan) \
            +", memiliki ipk" + str(self.ipk)
        return s
    def ambilNIM(self):
        return self.NIM
    def ambilnama (self):
        return self.nama
    def ambilkotatinggal(self):
        return self.uangsaku
    def ambiljurusan(self):
        return self.jurusan
    def ambilipk(self):
        return self.ipk

class MhsTIF(Mahasiswa):
    """class MhsTIF yang dibangun dari class mahasiswa"""
    def katakanpy(self):
        print("python is cool")

c0 = MhsTIF(12,"andi","klaten","informatika", 3.4)
c1 = MhsTIF(243,"budi","solo","informatika", 3.3)
c2 = MhsTIF(32,"dian","jogja","informatika", 3.2)
c3 = MhsTIF(234,"anto","jakarta","informatika", 2.7)
c4 = MhsTIF(215,"desi","klaten","informatika", 2.89)
c5 = MhsTIF(166,"isa","jogja","informatika", 3.6)
c6 = MhsTIF(713,"pola","jogja","informatika", 3.4)
c7 = MhsTIF(148,"lala","sukoharjo","informatika", 1.8)
c8 = MhsTIF(91,"lina","boyolali","informatika", 2.3)
c9 = MhsTIF(130,"lia","boyolali","informatika", 3.9)
```

Ln: 7 Col: 4

Python 3.8.2 Shell

File Edit Shell Debug Options Window Help

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/Vian/Documents/prakalgostruk/UTS/algoritma pencarian1.py ==
lina tinggal di boyolali
lia tinggal di boyolali
>>>
```

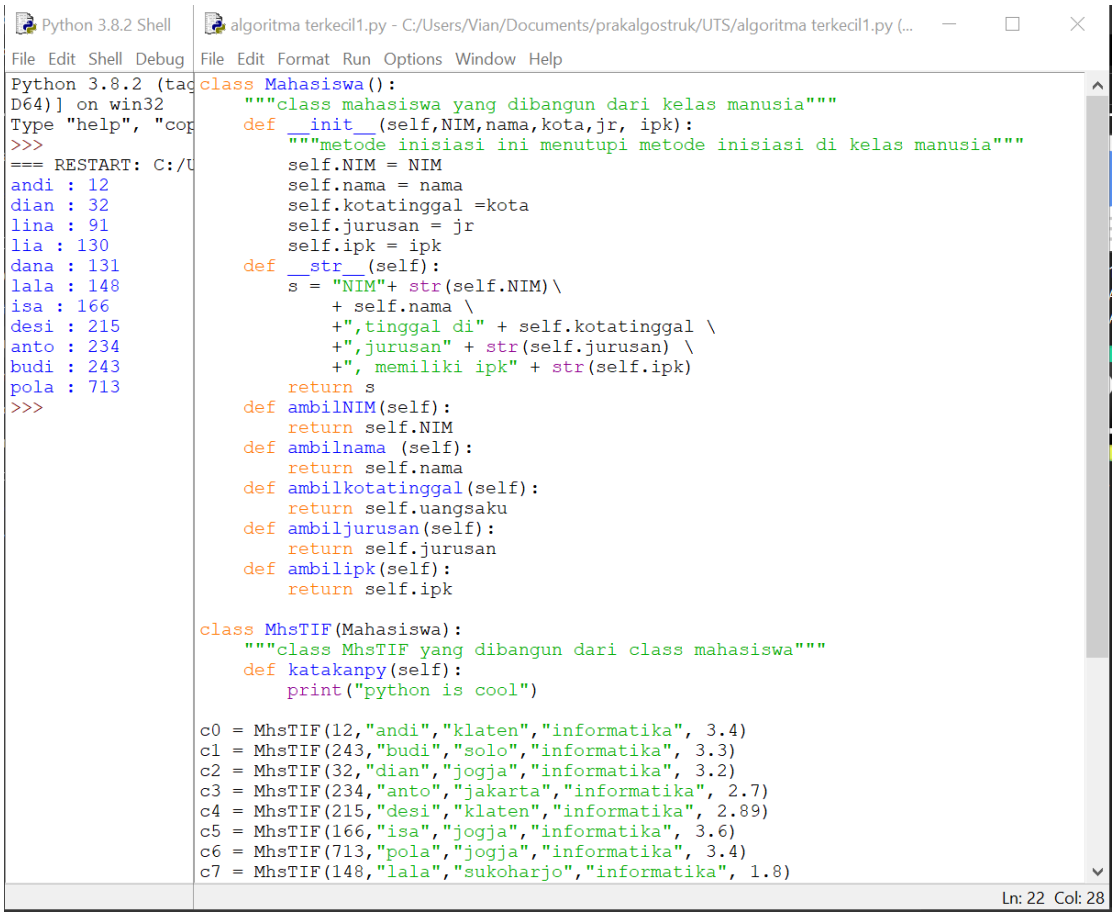
Ln: 7 Col: 4

```
c10 = MhsTIF(131,"dana","karanganyar","informatika", 3.4)

Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]

target = "boyolali"
for i in Daftar:
    if i.kotatinggal == target:
        print(i.nama + " tinggal di "+target)
```

Ln: 18 Col: 0

Ln: 7 Col: 4

## No 4


Python 3.8.2 Shell
File Edit Shell Debug
Python 3.8.2 (tag
D64)] on win32
Type "help", "cop
>>>
=== RESTART: C:/U
andi : 12
dian : 32
lina : 91
lia : 130
dana : 131
lala : 148
isa : 166
desi : 215
anto : 234
budi : 243
pola : 713
>>>
algoritma terkecil1.py - C:/Users/Vian/Documents/prakalgostruk/UTS/algoritma terkecil1.py (...
File Edit Format Run Options Window Help
class Mahasiswa():
"""class mahasiswa yang dibangun dari kelas manusia"""
def __init__(self,NIM,nama,kota,jr, ipk):
"""metode inisiasi ini menutupi metode inisiasi di kelas manusia"""
self.NIM = NIM
self.nama = nama
self.kotatinggal =kota
self.jurusan = jr
self.ipk = ipk
def __str__(self):
s = "NIM"+ str(self.NIM)\
+ self.nama \
+",tinggal di" + self.kotatinggal \
+",jurusan" + str(self.jurusan) \
+", memiliki ipk" + str(self.ipk)
return s
def ambilNIM(self):
return self.NIM
def ambilnama (self):
return self.nama
def ambilkotatinggal(self):
return self.uangsaku
def ambiljurusan(self):
return self.jurusan
def ambilipk(self):
return self.ipk
class MhsTIF(Mahasiswa):
"""class MhsTIF yang dibangun dari class mahasiswa"""
def katakanpy(self):
print("python is cool")
c0 = MhsTIF(12,"andi","klaten","informatika", 3.4)
c1 = MhsTIF(243,"budi","solo","informatika", 3.3)
c2 = MhsTIF(32,"dian","jogja","informatika", 3.2)
c3 = MhsTIF(234,"anto","jakarta","informatika", 2.7)
c4 = MhsTIF(215,"desi","klaten","informatika", 2.89)
c5 = MhsTIF(166,"isa","jogja","informatika", 3.6)
c6 = MhsTIF(713,"pola","jogja","informatika", 3.4)
c7 = MhsTIF(148,"lala","sukoharjo","informatika", 1.8)
Ln: 22 Col: 28

```
c8 = MhsTIF(91,"lina","boyolali","informatika", 2.3)
c9 = MhsTIF(130,"lia","boyolali","informatika", 3.9)
c10 = MhsTIF(131,"dana","karanganyar","informatika", 3.4)

Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]

def urutkan(A):
    baru = {}
    for i in range(len(A)):
        baru[A[i].nama] = A[i].NIM
    listofTuples = sorted(baru.items(), key=lambda x: x[1])
    for elem in listofTuples :
        print(elem[0] , ":" , elem[1] )
urutkan(Daftar)
```

Ln: 21 Col: 0 Ln: 16 Col: 4