

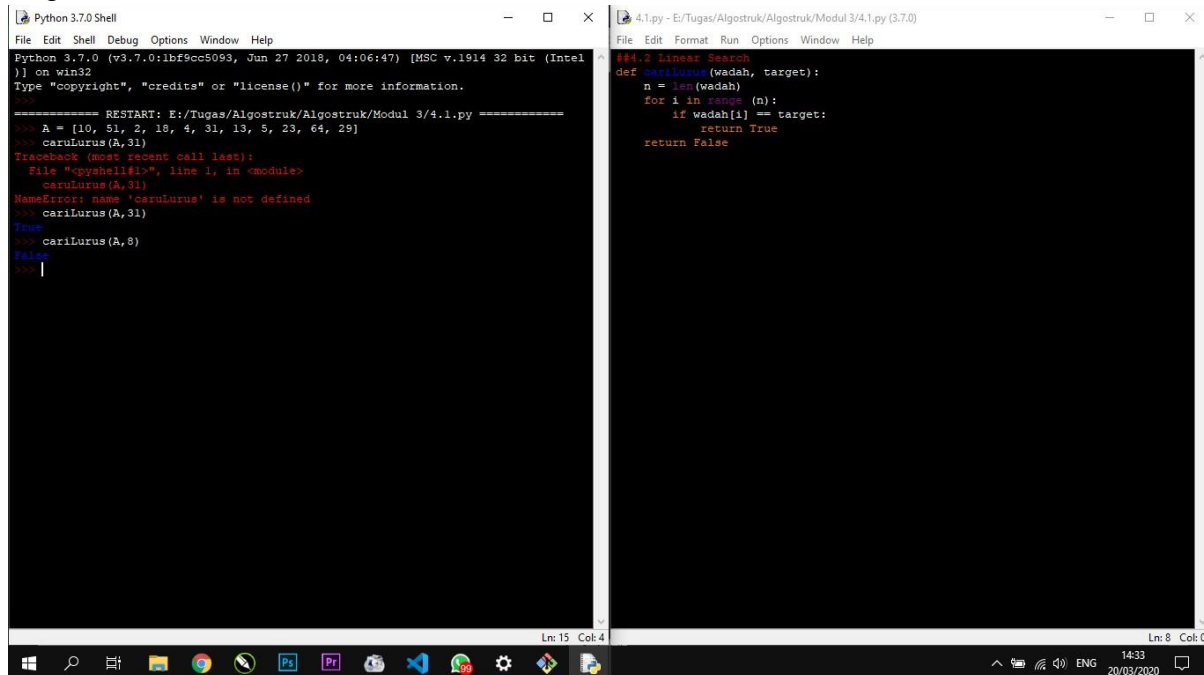
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MODUL 4

Kegiatan 4.1

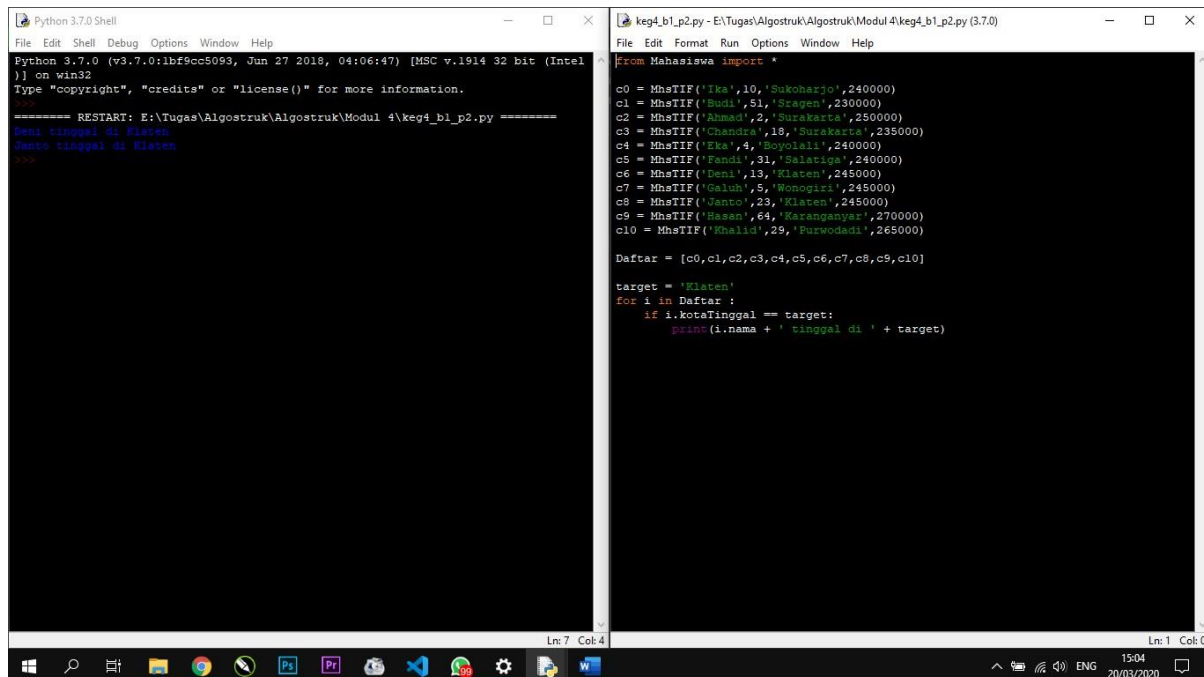


The screenshot shows two windows from a Windows 10 desktop. The left window is a Python 3.7.0 Shell with the following content:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\Tugas\Algostruk\Algostruk\Modul 3\4.1.py =====
>>> A = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
>>> carulurus(A,31)
Traceback (most recent call last):
  File "<pyshell>", line 1, in <module>
    carulurus(A,31)
NameError: name 'carulurus' is not defined
>>> carilurus(A,31)
True
>>> carilurus(A,8)
False
>>>
```

The right window is a Python script editor showing a linear search function:

```
4.1.py - E:\Tugas\Algostruk\Algostruk\Modul 3\4.1.py (3.7.0)
File Edit Format Run Options Window Help
def carilurus(wadah, target):
    n = len(wadah)
    for i in range(n):
        if wadah[i] == target:
            return True
    return False
```



The screenshot shows two windows from a Windows 10 desktop. The left window is a Python 3.7.0 Shell with the following content:

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>>>
===== RESTART: E:\Tugas\Algostruk\Algostruk\Modul 4\keg4_b1_p2.py =====
>>> budi tinggal di Klaten
bunde tinggal di Klaten
>>>
```

The right window is a Python script editor showing a list of students and a search function:

```
keg4_b1_p2.py - E:\Tugas\Algostruk\Algostruk\Modul 4\keg4_b1_p2.py (3.7.0)
File Edit Format Run Options Window Help
from Mahasiswa import *

c0 = MhsTIF('Ika',10,'Sukoharjo',240000)
c1 = MhsTIF('Budi',51,'Sragen',230000)
c2 = MhsTIF('Ahmad',2,'Surakarta',250000)
c3 = MhsTIF('Chandra',19,'Surabaya',235000)
c4 = MhsTIF('Eka',4,'Bojoleali',240000)
c5 = MhsTIF('Fandi',31,'Salatiga',240000)
c6 = MhsTIF('Deni',13,'Klaten',245000)
c7 = MhsTIF('Galuh',5,'Wonogiri',245000)
c8 = MhsTIF('Janto',23,'Klaten',245000)
c9 = MhsTIF('Hasan',64,'Karanganyar',270000)
c10 = MhsTIF('Khaidid',29,'Purwodadi',265000)

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

target = 'Klaten'
for i in Daftar :
    if i.kotaTinggal == target:
        print(i.nama + ' tinggal di ' + target)
```

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\Tugas\Algostruk\Algostruk\Modul 4\keg4_b1_p3.py =====
Uang saku terkecil:
('Budi', 230000)
#####
Uang saku terbesar:
('Hasan', 270000)
#####
Uang saku <250 ribu:
['Ika', 'Budi', 'Chandra', 'Eka', 'Fandi', 'Deni', 'Galuh', 'Janto']
#####
Uang saku >250 ribu:
['Ahmad', 'Hasan', 'Khalid']
#####
>>>

Python 3.7.0 Shell
File Edit Format Run Options Window Help
keg4_b1_p3.py - E:\Tugas\Algostruk\Algostruk\Modul 4\keg4_b1_p3.py (3.7.0)
from keg4_b1_p2 import *

#Mencari nilai terkecil pada array yang tidak urut
def cariTerkecil(kumpulan):
    n = len(kumpulan)
    #anggap item pertama adalah yang terkecil
    terkecil = kumpulan[0]
    #tentukan apakah item lain lebih kecil
    for i in range(1,n):
        if kumpulan[i] < terkecil:
            terkecil = kumpulan[i]

    return terkecil #kembalikan yang terkecil

#Uang saku terkecil
def kecil(Daftar):
    minim = Daftar[0].uangSaku
    for i in Daftar:
        if i.uangSaku < minim:
            minim = i.uangSaku
            if i.uangSaku == minim:
                nama = i.nama
    return nama, minim
print("Uang saku terkecil: ")
print(kecil(Daftar))
print("#####")

#Uang saku terbesar
def besar(Daftar):
    maxim = Daftar[0].uangSaku
    for i in Daftar:
        if i.uangSaku > maxim:
            maxim = i.uangSaku
            if i.uangSaku == maxim:
                nama = i.nama
    return nama, maxim
print("Uang saku terbesar: ")
print(besar(Daftar))
print("#####")

#Uang saku <250 ribu
nama = i.nama
return nama, minim
print("Uang saku terkecil: ")
print(kecil(Daftar))
print("#####")

#Uang saku terbesar
def besar(Daftar):
    maxim = Daftar[0].uangSaku
    for i in Daftar:
        if i.uangSaku > maxim:
            maxim = i.uangSaku
            if i.uangSaku == maxim:
                nama = i.nama
    return nama, maxim
print("Uang saku terbesar: ")
print(besar(Daftar))
print("#####")

#Uang saku <250 ribu
def kurang(Daftar):
    a=[]
    for i in Daftar:
        if i.uangSaku < 250000:
            a.append(i.nama)
    return a
print("Uang saku <250 ribu: ")
print(kurang(Daftar))
print("#####")

#Uang saku > 250 ribu
def lebih(Daftar):
    a = []
    for i in Daftar:
        if i.uangSaku >= 250000:
            a.append(i.nama)
    return a
print("Uang saku >250 ribu: ")
print(lebih(Daftar))
print("#####")
```

Kegiatan 4.2

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/Tugas/Algostruk/Algostruk/Modul 4/keg4_b2.py =====
>>>
True
False
>>>
```

```
keg4_b2.py - E:/Tugas/Algostruk/Algostruk/Modul 4/keg4_b2.py (3.7.0)
File Edit Format Run Options Window Help
##### Search
def binSe(kumpulan, target):
    #mulai dari seluruh runtutan elemen
    low = 0
    high = len(kumpulan) - 1

    #cara berulang belah runtutan itu menjadi separuhnya
    # sampai targetnya ditemukan
    while low <= high:
        #temukan pertengahan runtut itu
        mid = (high + low) // 2
        #apakah pertengahannya semua target?
        if kumpulan[mid] == target:
            return True
        #atau targetnya di sebelah kirinya?
        elif target < kumpulan[mid]:
            high = mid - 1
        #atau targetnya ada di sebelah kananya?
        else:
            low = mid + 1
        #jika runtutnya tidak bisa dibelah lagi, berarti targetnya tidak ada
        return False

kumpulan = [2,3,5,6,6,6,8,9,9,10,11,12,13,13,14]
target = 6
print(binSe(kumpulan, target))
kumpulan = [2,3,5,6,6,6,8,9,9,10,11,12,13,13,14]
target = 7
print(binSe(kumpulan, target))
```