

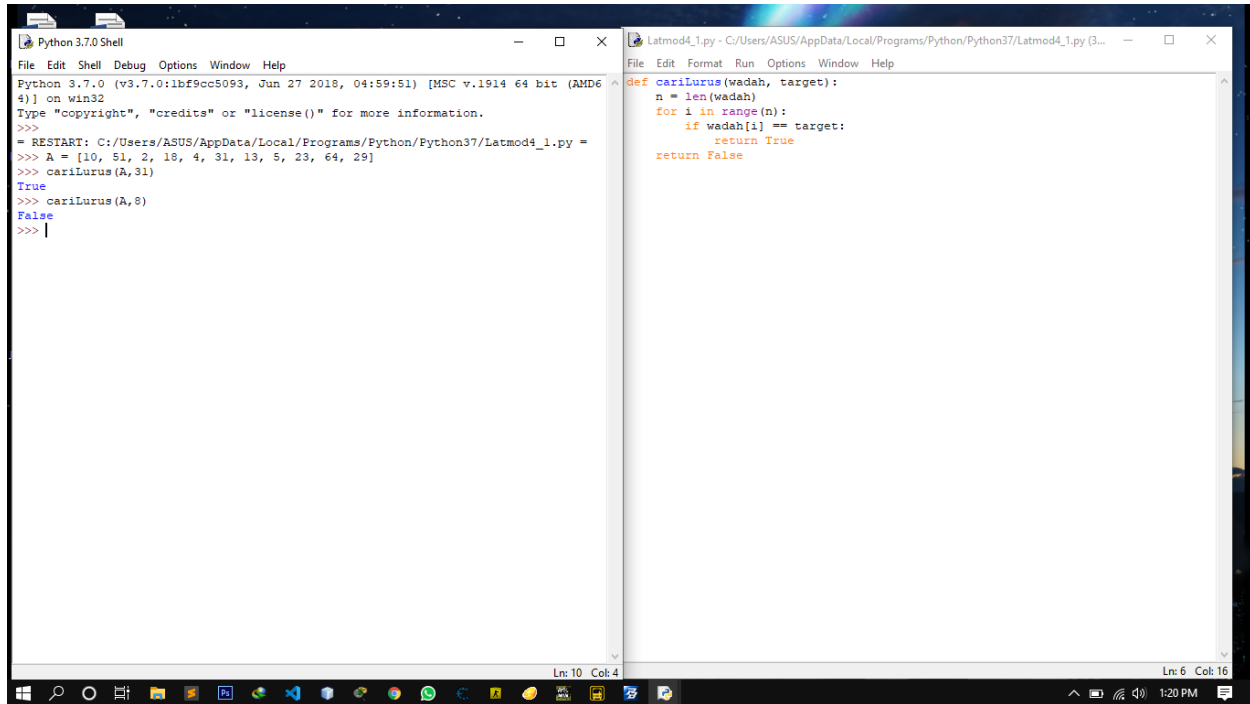
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Kelas : C

Kegiatan Praktikum Modul 4

A. Linear Search



The screenshot shows a Python IDE with two windows. The left window is a Python 3.7.0 Shell, and the right window is a file named 'Latmod4_1.py'.

Python 3.7.0 Shell:

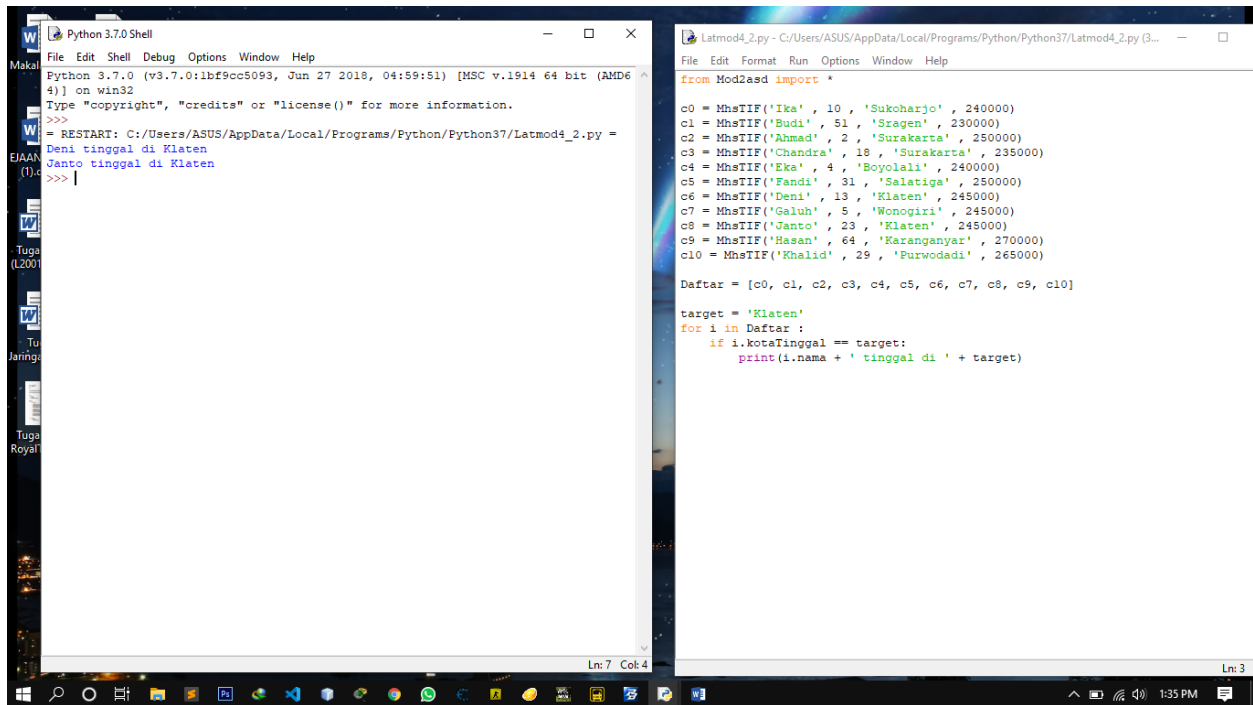
```
Python 3.7.0 (tags/v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_1.py =
>>> A = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
>>> cariLurus(A, 31)
True
>>> cariLurus(A, 8)
False
>>> |
```

Latmod4_1.py:

```
def cariLurus(wadah, target):
    n = len(wadah)
    for i in range(n):
        if wadah[i] == target:
            return True
    return False
```

The taskbar at the bottom shows the Windows Start button, search icon, task view icon, and several application icons including File Explorer, Photos, Microsoft Edge, and WhatsApp. The system clock shows 1:20 PM.

B. Pencarian Lurus untuk Objek Buatan Sendiri



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py =
Deni tinggal di Klaten
Janto tinggal di Klaten
>>>

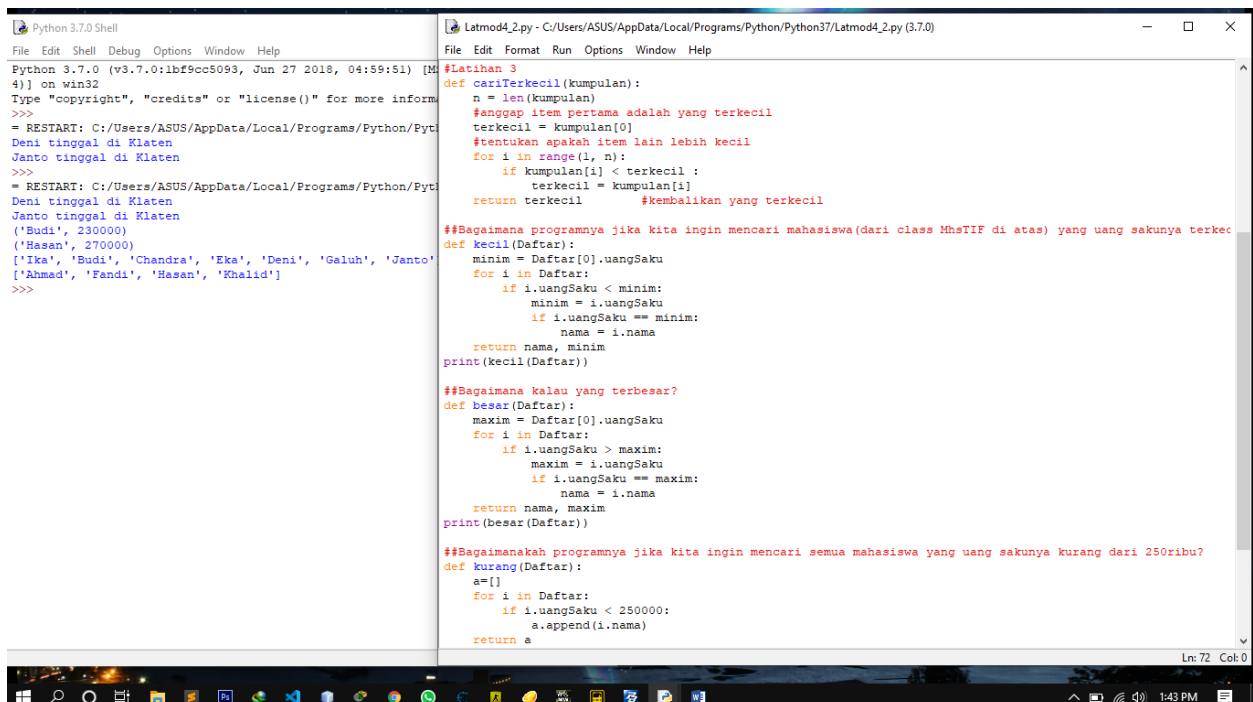
Latmod4_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py (3...
File Edit Format Run Options Window Help
from Mod2asid import *

c0 = MhsTIF('Ika', 10, 'Sukoharjo', 240000)
c1 = MhsTIF('Budi', 51, 'Szagen', 230000)
c2 = MhsTIF('Ahmad', 2, 'Surakarta', 250000)
c3 = MhsTIF('Chandra', 18, 'Surakarta', 235000)
c4 = MhsTIF('Eka', 4, 'Boyolali', 240000)
c5 = MhsTIF('Fandi', 31, 'Salatiga', 250000)
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('Khalid', 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)
```

C. Pencarian Lurus di Linked List



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py =
Deni tinggal di Klaten
Janto tinggal di Klaten
>>>

Latmod4_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py (3.7.0)
File Edit Format Run Options Window Help
#Latihan 3
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

##Bagaimana programnya jika kita ingin mencari mahasiswa(dari class MhsTIF di atas) yang uang sakunya 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(kecil(Daftar))

##Bagaimana kalau yang 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(besar(Daftar))

##Bagaimanakah programnya jika kita ingin mencari semua mahasiswa yang uang sakunya kurang dari 250ribu?
def kurang(Daftar):
    a=[]
    for i in Daftar:
        if i.uangSaku < 250000:
            a.append(i.nama)
    return a
```

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py
Deni tinggal di Klaten
Janto tinggal di Klaten
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py
Deni tinggal di Klaten
Janto tinggal di Klaten
('Budi', 230000)
('Hasan', 270000)
['Ika', 'Budi', 'Chandra', 'Eka', 'Deni', 'Galuh', 'Janto', 'Ahmad', 'Fandi', 'Hasan', 'Khalid']
>>>

Latmod4_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_2.py (3.7.0)
File Edit Format Run Options Window Help
##Bagaimana programnya jika kita ingin mencari mahasiswa(dari class MhsTIF di atas) yang uang sakunya terkecil?
def kecil(Daftar):
    minim = Daftar[0].uangSaku
    for i in Daftar:
        if i.uangSaku < minim:
            minim = i.uangSaku
            nama = i.nama
    return nama, minim
print(kecil(Daftar))

##Bagaimana kalau yang terbesar?
def besar(Daftar):
    maxim = Daftar[0].uangSaku
    for i in Daftar:
        if i.uangSaku > maxim:
            maxim = i.uangSaku
            nama = i.nama
    return nama, maxim
print(besar(Daftar))

##Bagaimanakah programnya jika kita ingin mencari semua mahasiswa yang uang sakunya kurang dari 250ribu?
def kurang(Daftar):
    a=[]
    for i in Daftar:
        if i.uangSaku < 250000:
            a.append(i.nama)
    return a
print(kurang(Daftar))

##Bagaimana kalau lebih dari 250 ribu?
def lebih(Daftar):
    a = []
    for i in Daftar:
        if i.uangSaku >= 250000:
            a.append(i.nama)
    return a
print(lebih(Daftar))

Ln: 72 Col: 0
```

D. Binary Search

1.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_3.py =
True
False
>>> |

Latmod4_3.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_3.py (3.7.0)
File Edit Format Run Options Window Help
#Latihan 4
def binSe(list, target):
    #mulai dari seluruh runtutan elemen
    low = 0
    high = len(list) - 1

    #secara 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 list[mid] == target:
            return True
        #ataukah targetnya di sebelah kirinya?
        elif target < list[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

list = [2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
target = 10 #ada di list
print(binSe(list,target))

list = [2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
target = 32 #tidak ada di list
print(binSe(list,target))

Ln: 7 Col: 4
Ln: 25 Col: 24
```

2.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.191
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/La
[3]
False
>>>
```

```
Latmod4_4.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod4_4.py (3.7.0)
File Edit Format Run Options Window Help
##Dapatkan kamu mengubah programnya agar dia mengembalikan index-nya kalau targetnya ditemukan,
##dan mengembalikan False kalau target tidak ditemukan?

def binSe(list, target):
    a=[]
    low = 0
    high = len(list) - 1
    while low<high:
        mid = (low+high)//2
        if list[mid] == target:
            a.append(list.index(target))
            i=list.index(target)-1
            j = list.index(target) + 1
            while target == list[i]:
                a.append(i)
                i-=1
            while target == list[j]:
                a.append(j)
                j+=1
            return a
        elif target<list[mid]:
            high = mid - 1
        else:
            low = mid + 1
    return False

list = [2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
target = 10 #ada di list
print(binSe(list,target))

list = [2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
target = 32 #tidak ada di list
print(binSe(list,target))
|
```

Ln: 33 Col: 25