

Praktikum Algostruk

Modul 4

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Kelas : A

Tugas

1.

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no1.py =====
[6, 8]
>>>
```

```
no1.py - E:/algostruk/MODUL_4/no1.py (3.7.4)
File Edit Format Run Options Window Help
class MhsTif(object):
    def __init__(self, nama, nim, kota, uangSaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangSaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def cariKota(list, target):
    a = []
    for i in list:
        if i.kota == target:
            a.append(list.index(i))
    return a

a = cariKota(Daftar, "Klaten")
print(a)
|
```

2.

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no2.py =====
230000
>>>
```

```
no2.py - E:/algostruk/MODUL_4/no2.py (3.7.4)
File Edit Format Run Options Window Help
class MhsTif(object):
    def __init__(self, nama, nim, kota, uangSaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangSaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def cariUangSakuTerkecil(list):
    temp = list[0].uangSaku
    for i in list[1:]:
        if i.uangSaku < temp:
            temp = i.uangSaku
    return temp

a = cariUangSakuTerkecil(Daftar)
print(a)
|
```

3.

The screenshot shows two windows. The left window is a Python 3.7.4 Shell with the following content:

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no3.py =====
[<__main__.MhsTif object at 0x034D6A70>]
>>>
```

The right window is a Python script editor for no3.py with the following content:

```
no3.py - E:/algostruk/MODUL_4/no3.py (3.7.4)
File Edit Format Run Options Window Help

class MhsTif(object):
    def __init__(self, nama, nim, kota, uangSaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangSaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def cariUSTerkecil(list):
    temp = [list[0]]
    for i in list[1:]:
        if i.uangSaku < temp[0].uangSaku:
            temp = [i]
        elif i.uangSaku == temp[0].uangSaku:
            temp.append(i)
    return temp

a = cariUSTerkecil(Daftar)
print(a)
```

4.

The screenshot shows two windows. The left window is a Python 3.7.4 Shell with the following content:

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no4.py =====
Bintang
Budi
Chandra
Eka
Deni
Galuh
Janto
>>>
```

The right window is a Python script editor for no4.py with the following content:

```
no4.py - E:/algostruk/MODUL_4/no4.py (3.7.4)
File Edit Format Run Options Window Help

class MhsTif(object):
    def __init__(self, nama, nim, kota, uangSaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangSaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def cariUangSakuKurang250k(list):
    temp = []
    for i in list:
        if i.uangSaku < 250000:
            temp.append(i)
    return temp

a = cariUangSakuKurang250k(Daftar)
for i in a:
    print(i.nama)
```

5.

```

no5.py - E:/algostruk/MODUL_4/no5.py (3.7.4)
File Edit Format Run Options Window Help

class MhsTif(object):
    def __init__(self, nama, nim, kota, uangsaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangsaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def cariLinkedList(head, target):
    temp = head
    while temp.data != None:
        if temp.data == target:
            return temp
    return -1

```

6.

```

Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:099359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no6.py =====
2
>>>

```

```

no6.py - E:/algostruk/MODUL_4/no6.py (3.7.4)
File Edit Format Run Options Window Help

class MhsTif(object):
    def __init__(self, nama, nim, kota, uangsaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangsaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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]

def binSe(kumpulan, target):
    low = 0
    high = len(kumpulan)-1
    while low <= high:
        mid = (high+low)//2
        if kumpulan[mid] == target:
            return mid
        elif target < kumpulan[mid]:
            high = mid-1
        else:
            low = mid+1
    return False

kumpulan = [2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
print(binSe(kumpulan, 5))

```

7.

```

Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 19:29:22) [MSC v.1916 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/algostruk/MODUL_4/no7.py =====
>>> [3, 4, 5]
>>> [3, 4, 5]
>>>

no7.py - E:/algostruk/MODUL_4/no7.py (3.7.4)
File Edit Format Run Options Window Help
class MhsTif(object):
    def __init__(self, nama, nim, kota, uangSaku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = uangSaku

c0 = MhsTif("Bintang", 10, "Solo", 240000)
c1 = MhsTif("Budi", 51, "Sragen", 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("Jauco", 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]

def binSeMass(kumpulan, target):
    temp = []
    low = 0
    high = len(kumpulan)-1
    while low <= high:
        mid = (high+low)//2
        if kumpulan[mid] == target:
            midKiri = mid-1
            while kumpulan[midKiri] == target:
                temp.append(midKiri)
                midKiri = midKiri-1
            temp.append(mid)
            midKanan = mid+1
            while kumpulan[midKanan] == target:
                temp.append(midKanan)
                midKanan = midKanan+1
            return temp
        elif target < kumpulan[mid]:
            high = mid-1
        else:
            low = mid+1

```

8.

```

no8.py - E:/algostruk/MODUL_4/no8.py (3.7.4)
File Edit Format Run Options Window Help
"""Karena menggunakan konsep Big-O. Dimana yang dipakai
adalah rumus O(log n) dengan rincian 1 = 1, 2 = 2, 4 = 3, 10 = 4, 100 = 7, 1000=
Di mana log berasal dari pangkat log berbasis 2. Dengan begitu dapat mengetahui
maksimal tebakan.
Untuk pola sendiri:
    apabila ingin menebak angka 70

    a = nilai tebakan pertama // 2
    tebakan selanjutnya = nilai tebakan "lebih dari" + a
    *jika hasil tebakan selanjutnya "kurang dari", maka nilai yang dipakai
    tetap nilai lebih dari sebelumnya*
    a = a // 2

Simulasi
    tebakan ke 1: 50 (mengambil nilai tengah) jawaban= "lebih dari itu"
    tebakan ke 2: 75 (dari 50 + 25) jawaban = "kurang dari itu"
    tebakan ke 3: 62 (dari 50 + 12) jawaban = "lebih dari itu"
    tebakan ke 4: 68 (dari 62 + 6) jawaban = "lebih dari itu"
    tebakan ke 5: 71 (dari 68 + 3) jawaban = "kurang dari itu"
    tebakan ke 6: 69 (dari 68 + 1) jawaban = "lebih dari itu"
    tebakan ke 7: antara 71 dan 69 hanya ada 1 angka = 70!!!

"""

```