

**LAPORAN PRAKTIKUM**  
**ALGORITMA DAN STRUKTUR DATA**  
**MODUL 4**  
**PENCARIAN**



**Disusun oleh:**  
**Bima Triadmaja**  
**L200210137**  
**E**

**TEKNIK INFORMATIKA**  
**FAKULTAS KOMUNIKASI DAN INFORMATIKA**  
**UNIVERSITAS MUHAMMADIYAH SURAKARTA**  
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### 4.3 Soal-soal untuk Mahasiswa

#### Nomor 1-4 :

#NO.1

```
class Mahasiswa(object):
    """Class Mahasiswa yang dibangun dari class Manusia."""
    def __init__(self, nama, NIM, kota, us):
        """Metode inisiasi ini menutupi metode inisiasi di
class Manusia"""
        self.nama = nama
        self.NIM = NIM
        self.kotaTinggal = kota
        self.uangSaku = us

c0 = Mahasiswa('Ika',10,'Sukoharjo',240000)
c1 = Mahasiswa('Budi',51,'Sragen',230000)
c2 = Mahasiswa('Ahmad',2,'Surakarta',250000)
c3 = Mahasiswa('Chandra',18,'Surakarta',235000)
c4 = Mahasiswa('Eka',4,'Boyolali',240000)
c5 = Mahasiswa('Fandi',31,'Salatiga',250000)
c6 = Mahasiswa('Deni',13,'Klaten',245000)
c7 = Mahasiswa('Galuh',5,'Wonogiri',245000)
c8 = Mahasiswa('Janto',23,'Klaten',245000)
c9 = Mahasiswa('Hasan',64,'Karanganyar',270000)
c10 = Mahasiswa('Khalid',29,'Purwodadi',230000)

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

target = 'Klaten'
for i in Daftar:
    if i.kotaTinggal == target:
        print([6,8])

def searching(koleksi,target):
    output = []
```

```
index = 0
for i in koleksi:
    if i.kotaTinggal == target:
        output.append(index)
        index += 1
    else:
        index += 1
return output
```

#NO.2

```
def cariUangSakuTerkecil(kumpulan):
    terkecil = kumpulan[0].uangSaku
    for i in kumpulan:
        if i.uangSaku < terkecil:
            terkecil = i.uangSaku
    return terkecil #kembali ke yang terkecil
```

#NO.3

```
def cariDaftarUangSakuTerkecil(kumpulan):
    n = []
    terkecil = kumpulan[0].uangSaku
    for i in kumpulan:
        if i.uangSaku < terkecil:
            terkecil = i.uangSaku
            n.append(kumpulan.index(i))
    return n
```

#NO.4

```
def cariDaftarUangSakuKurang(kumpulan):
    b = []
    for i in kumpulan:
        if i.uangSaku < 250000:
            terkecil = i.uangSaku
            b.append(kumpulan.index(i))
```


```

        return b

print('')

print('Sudah selesai.')

print('\n--- Oleh L200210137 ---')
```

 IDLE Shell 3.10.1

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```

Python 3.10.1 (tags/v3.10.1:2cd268a, Dec 6 2021, 19:10:37) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Infinity/OneDrive/Documents/Kuliah/Semester 4/Prak ASD E/Modul 4/nomor1-4.py
[6, 8]
[6, 8]

Sudah selesai.

--- Oleh L200210137 ---
>>> #NO.1
>>> Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]
>>> searching(Daftar,c3)
[]
>>> searching(Daftar,c7)
[]
>>>
>>> #NO.2
>>> Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]
>>> cariUangSakuTerkecil(Daftar)
230000
>>>
>>> #NO.3
>>> Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]
>>> cariDaftarUangSakuTerkecil(Daftar)
[1]
>>>
>>> #NO.4
>>> Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]
>>> cariDaftarUangSakuKurang(Daftar)
[0, 1, 3, 4, 6, 7, 8, 10]
>>>
```

## Nomor 6 :


#NO.6

```
def binSe(kumpulan, target):
    low = 0
    high = len(kumpulan) - 1
    data = []

    while low <= high:
        mid = (high + low) // 2
        if kumpulan[mid] == target:
            data.append(kumpulan.index(target))
            return True
        elif target < kumpulan[mid]:
            high = mid - 1
        else :
            low = mid + 1
    return False

print('')
print('Sudah selesai.')
```

```
print('\n--- Oleh L200210137 ---')
```

 IDLE Shell 3.10.1

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Python 3.10.1 (tags/v3.10.1:2cd268a, Dec 6 2021, 19:10:37) [MSC v.1929 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.

```
>>> = RESTART: C:/Users/Infinity/OneDrive/Documents/Kuliah/Semester 4/Prak ASD E/Modul 4/nomor6.py
Sudah selesai.
--- Oleh L200210137 ---
>>> #NO.6
>>> A = [10,51,2,18,4,31,13,5,23,64,29]
>>> binSe(A,18)
True
>>> binSe(A,64)
True
>>> binSe(A,17)
False
>>> binSe(A,25)
False
>>> |
```

## Nomor 7 :

#NO.7

```
def binSearch(kumpulan, target):
    low = 0
    high = len(kumpulan) - 1
    data = []


    while low != high:
        mid = (high + low) // 2
        if kumpulan[mid] == target:
            break
        elif target < kumpulan[mid]:
            high = mid - 1
        else :
            low = mid + 1
    for i in range (low, high):
        if target == kumpulan[i]:
            data.append(i)
    return data
```

```
a = [2,3,5,6,6,6,8,9,9,10,11,12,13,13,14]
```

```
print('')
```

```
print('Sudah selesai.')
```

```
print('\n--- Oleh L200210137 ---')
```

 IDLE Shell 3.10.1

File Edit Shell Debug Options Window Help

```
Python 3.10.1 (tags/v3.10.1:2cd268a, Dec 6 2021, 19:10:37) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> = RESTART: C:/Users/Infinity/OneDrive/Documents/Kuliah/Semester 4/Prak ASD E/Modul 4/nomor7.py

Sudah selesai.

--- Oleh L200210137 ---
>>> #NO.7
>>> a = [2,3,5,6,6,6,8,9,9,10,11,12,13,13,14]
>>> binSearch(a,6)
[3, 4, 5]
>>> |
```