PRAKTIKUM

ALGORITMA DAN STRUKTUR DATA

MODUL 4

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PROGRAM STUDI

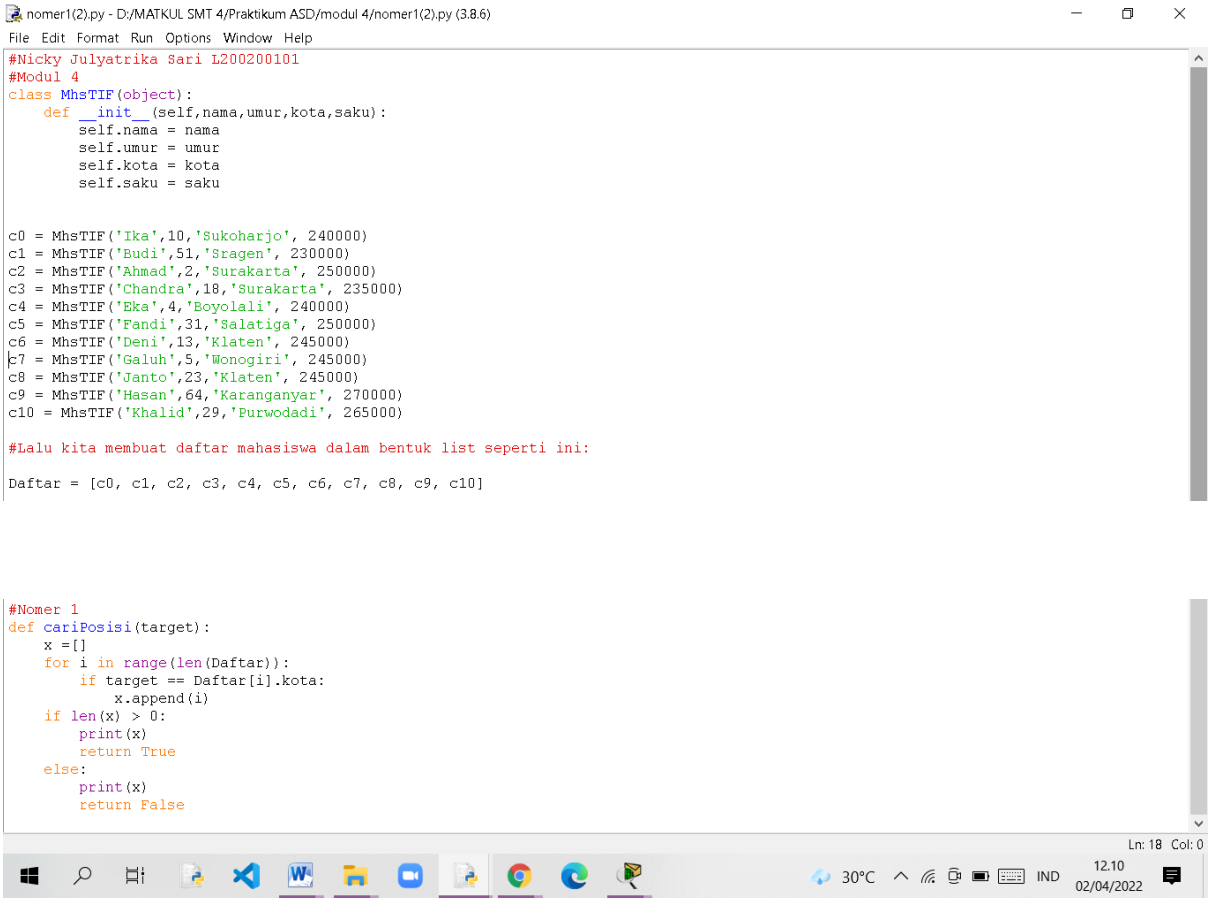
INFORMATIKA

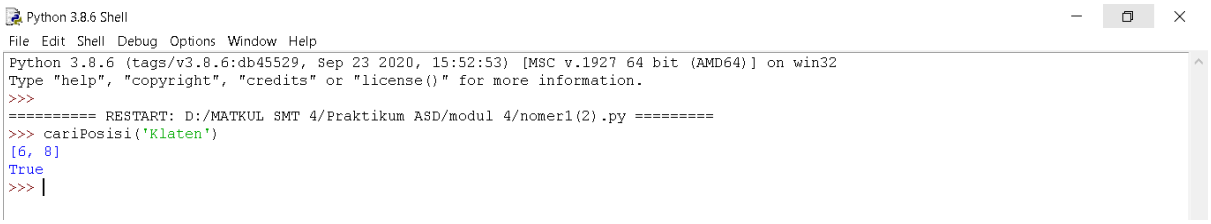
FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

TAHUN 2021/2022

1. Nomer 1

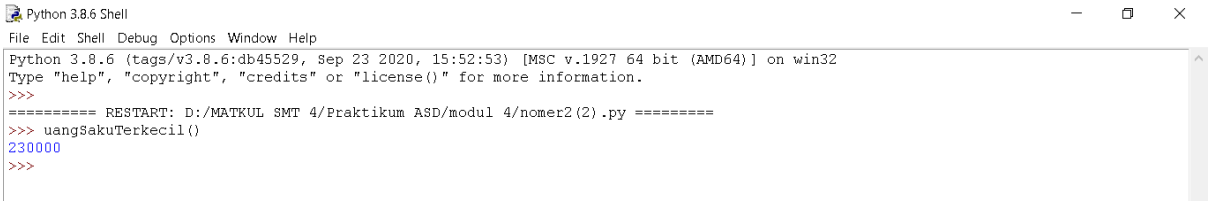




2. Nomer 2


nomer2(2).py - D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer2(2).py (3.8.6)
File Edit Format Run Options Window Help
#Nicky Julyatrika Sari L200200101
#Modul 4
class MhsTIF(object):
def __init__(self,nama,umur,kota,saku):
self.nama = nama
self.umur = umur
self.kota = kota
self.saku = saku
c0 = MhsTIF('Ika',10,'Sukoharjo', 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)
#Lalu kita membuat daftar mahasiswa dalam bentuk list seperti ini:
Daftar = [c0, c1, c2, c3, c4, c5, c6, c7, c8, c9, c10]


#Nomor 2
def uangSakuTerkecil():
terkecil = Daftar[0].saku
for i in range(len(Daftar)):
if terkecil > Daftar[i].saku:
terkecil = Daftar[i].saku
return terkecil
Ln: 11 Col: 0
30°C
IND
12.20
02/04/2022

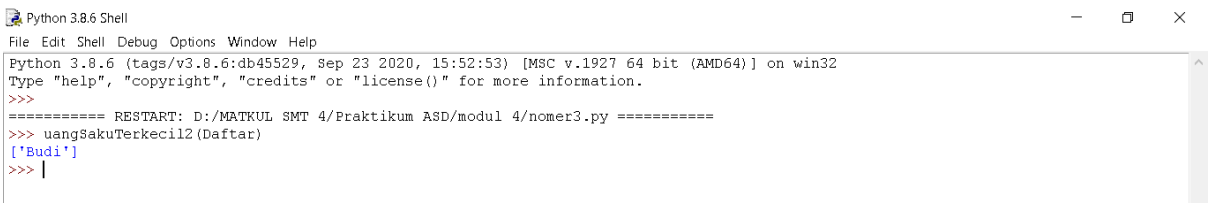

Python 3.8.6 Shell
File Edit Shell Debug Options Window Help
Python 3.8.6 (tags/v3.8.6:db45529, Sep 23 2020, 15:52:53) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer2(2).py ==========
>>> uangSakuTerkecil()
230000
>>>

3. Nomer 3

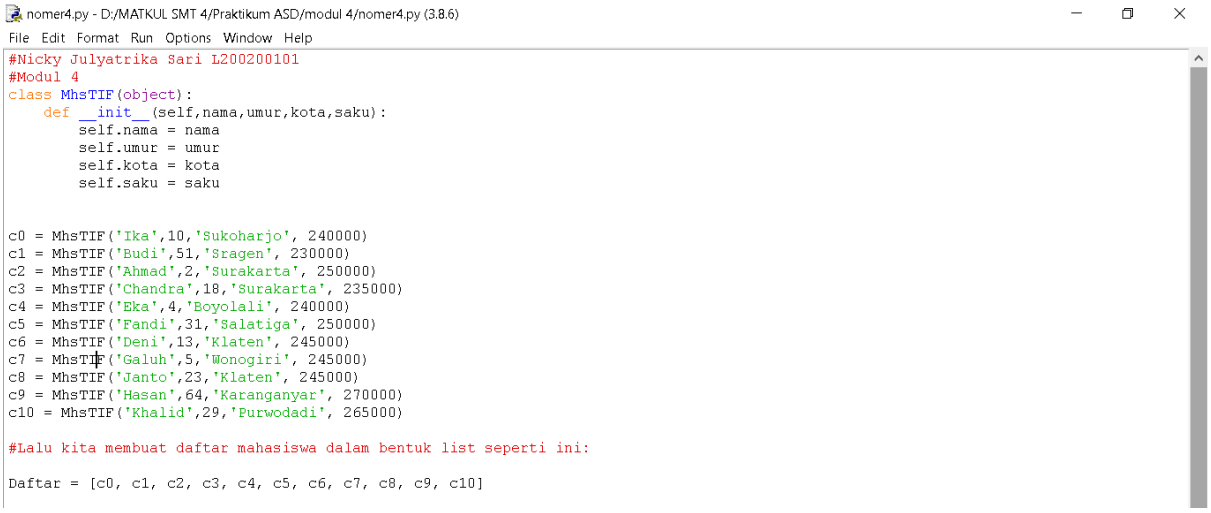

nomer3.py - D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer3.py (3.8.6)
File Edit Format Run Options Window Help
#Nicky Julyatrika Sari L200200101
#Modul 4
class MhsTIF(object):
def __init__(self,nama,umur,kota,saku):
self.nama = nama
self.umur = umur
self.kota = kota
self.saku = saku
c0 = MhsTIF('Ika',10,'Sukoharjo', 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)
#Lalu kita membuat daftar mahasiswa dalam bentuk list seperti ini:
Daftar = [c0, c1, c2, c3, c4, c5, c6, c7, c8, c9, c10]

```python
#Nomor 3
def uangSakuTerkecil2(a):
    terkecil = Daftar[0].saku
    list = []
    for i in range(len(a)):
        if a[i].saku < terkecil:
            terkecil = a[i].saku
    for i in range(len(a)):
        if a[i].saku == terkecil:
            list.append(a[i].nama)
    return list
```

Ln: 20 Col: 0



4. Nomer 4




```python
#Nicky Julyatrika Sari L200200101
#Modul 4
class MhsTIF(object):
    def __init__(self,nama,umur,kota,saku):
        self.nama = nama
        self.umur = umur
        self.kota = kota
        self.saku = saku


c0 = MhsTIF('Ika',10,'Sukoharjo', 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)

#Lalu kita membuat daftar mahasiswa dalam bentuk list seperti ini:

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

```python
#Nomor 4
def uangSakuKurangDari():
    list = []
    for i in range(len(Daftar)):
        if Daftar[i].saku < 250000:
            list.append(Daftar[i].nama)
    for x in list:
        print(x, end=' ')
```

Ln: 18 Col: 10

```
Python 3.8.6 Shell
File  Edit  Shell  Debug  Options  Window  Help
Python 3.8.6 (tags/v3.8.6:db45529, Sep 23 2020, 15:52:53) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer4.py ==========
>>> uangSakuKurangDari()
Ika Budi Chandra Eka Deni Galuh Janto
>>>
```

5. Nomer 5

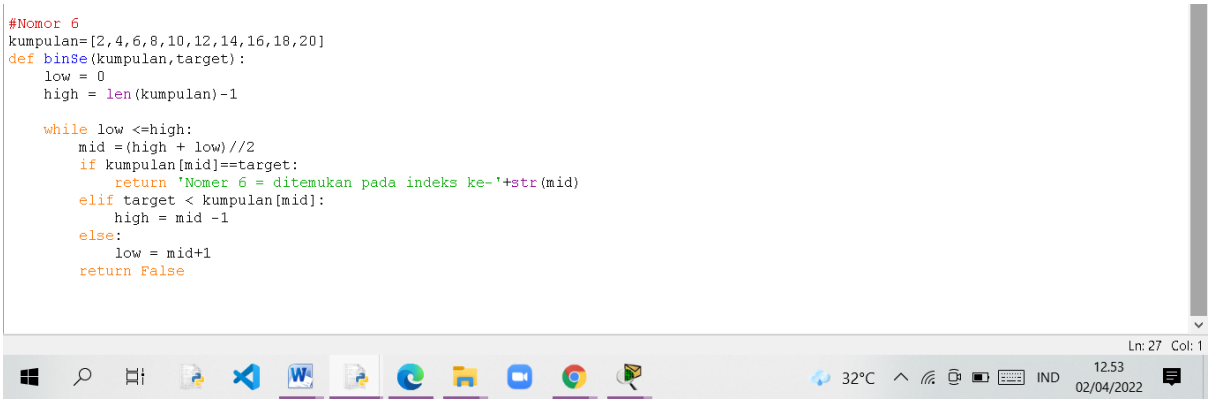
```
nomer5.py - D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer5.py (3.8.6)
File  Edit  Format  Run  Options  Window  Help
#Nicky Julyatrika Sari L200200101
#Modul 4
class MhsTIF(object):
    def __init__(self,nama,umur,kota,saku):
        self.nama = nama
        self.umur = umur
        self.kota = kota
        self.saku = saku


c0 = MhsTIF('Ika',10,'Sukoharjo', 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)

#Lalu kita membuat daftar mahasiswa dalam bentuk list seperti ini:

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

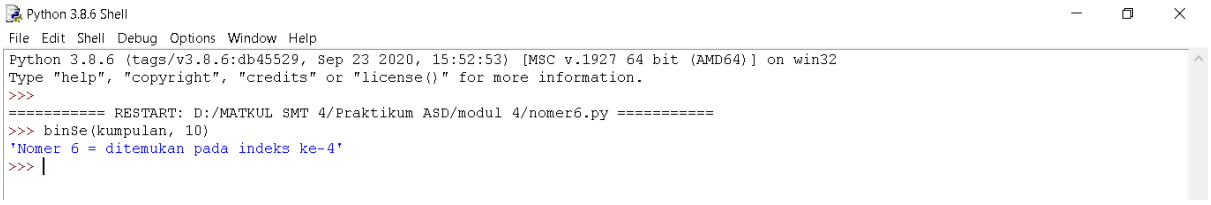
```
#Nomor 5
class Node():
    def __init__(self, data, link=None):
        self.data = data
        self.next = link

    def cariItem(self, cari):
        x = self
        awal = 1
        while x != None:
            if x.data == cari:
                return "Item berada di simpul ke - " + str(awal)
            else:
                awal += 1
                x = x.next
        return "Item tidak ditemukan"

c = Node(10)
c.next = Node(15)
c.next.next = Node(20)
```


```
Python 3.8.6 Shell
File  Edit  Shell  Debug  Options  Window  Help
Python 3.8.6 (tags/v3.8.6:db45529, Sep 23 2020, 15:52:53) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer5.py ==========
>>> c.cariItem(10)
'Item berada di simpul ke - 1'
>>> c.cariItem(15)
'Item berada di simpul ke - 2'
>>> c.cariItem(20)
'Item berada di simpul ke - 3'
>>>
```

6. Nomer 6


nomer6.py - D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer6.py (3.8.6)
File Edit Format Run Options Window Help
#Nicky Julyatrika Sari L200200101
#Modul 4
class MhsTIF(object):
def __init__(self,nama,umur,kota,saku):
self.nama = nama
self.umur = umur
self.kota = kota
self.saku = saku
c0 = MhsTIF('Ika',10,'Sukoharjo', 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)
#Lalu kita membuat daftar mahasiswa dalam bentuk list seperti ini:
Daftar = [c0, c1, c2, c3, c4, c5, c6, c7, c8, c9, c10]


#Nomor 6
kumpulan=[2,4,6,8,10,12,14,16,18,20]
def binSe(kumpulan,target):
low = 0
high = len(kumpulan)-1
while low <=high:
mid =(high + low)//2
if kumpulan[mid]==target:
return 'Nomer 6 = ditemukan pada indeks ke-'+str(mid)
elif target < kumpulan[mid]:
high = mid -1
else:
low = mid+1
return False
Ln: 27 Col: 1
32°C
IND
12.53
02/04/2022


Python 3.8.6 Shell
File Edit Shell Debug Options Window Help
Python 3.8.6 (tags/v3.8.6:db45529, Sep 23 2020, 15:52:53) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer6.py ==========
>>> binSe(kumpulan, 10)
'Nomer 6 = ditemukan pada indeks ke-4'
>>>

7. nomer 7

nomer7.py - D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer7.py (3.8.6)

File Edit Format Run Options Window Help

```
#Nomor 7
data = [2, 3, 5, 6, 6, 6, 8, 9, 9, 10, 11, 12, 13, 13, 14]

def binSe2(kumpulan,target):
    low = 0
    high = len(kumpulan)-1
    ketemu = False
    x = []

    while low <= high and not ketemu :
        mid = (high + low)//2
        if kumpulan[mid] == target:
            ketemu = True
        elif target < kumpulan[mid]:
            high = mid - 1
        else:
            low = mid + 1
    if not ketemu:
        print('Data tidak ditemukan')
    for i in range(len(kumpulan)):
        if kumpulan[i] == target:
            x.append(mid)
            mid+=1
    return x
```

Python 3.8.6 Shell

File Edit Shell Debug Options Window Help

```
Python 3.8.6 (tags/v3.8.6:db45529, Sep 23 2020, 15:52:53) [MSC v.1927 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/MATKUL SMT 4/Praktikum ASD/modul 4/nomer7.py ==========
>>> binSe2(data, 6)
[3, 4, 5]
>>> binSe2(data, 9)
[7, 8]
>>>
```

8. Nomer 8
   - Kesempatan yang diperoleh :
   - titik tebakan tertinggi di log 10
   - kemudia hasilnya di kalikan 3
   - dan kemudian hasilnya tersebut ditambah 1
     - Contoh :

       tebakan 1-1000

       1000 akar 10 = 3

       3 kali 3 = 9

       9 + 1 = 10

     - Contoh lain :

       tebakan 1-100

       100 akar 10 = 2

       2 kali 3 = 6

       6 + 1 =