

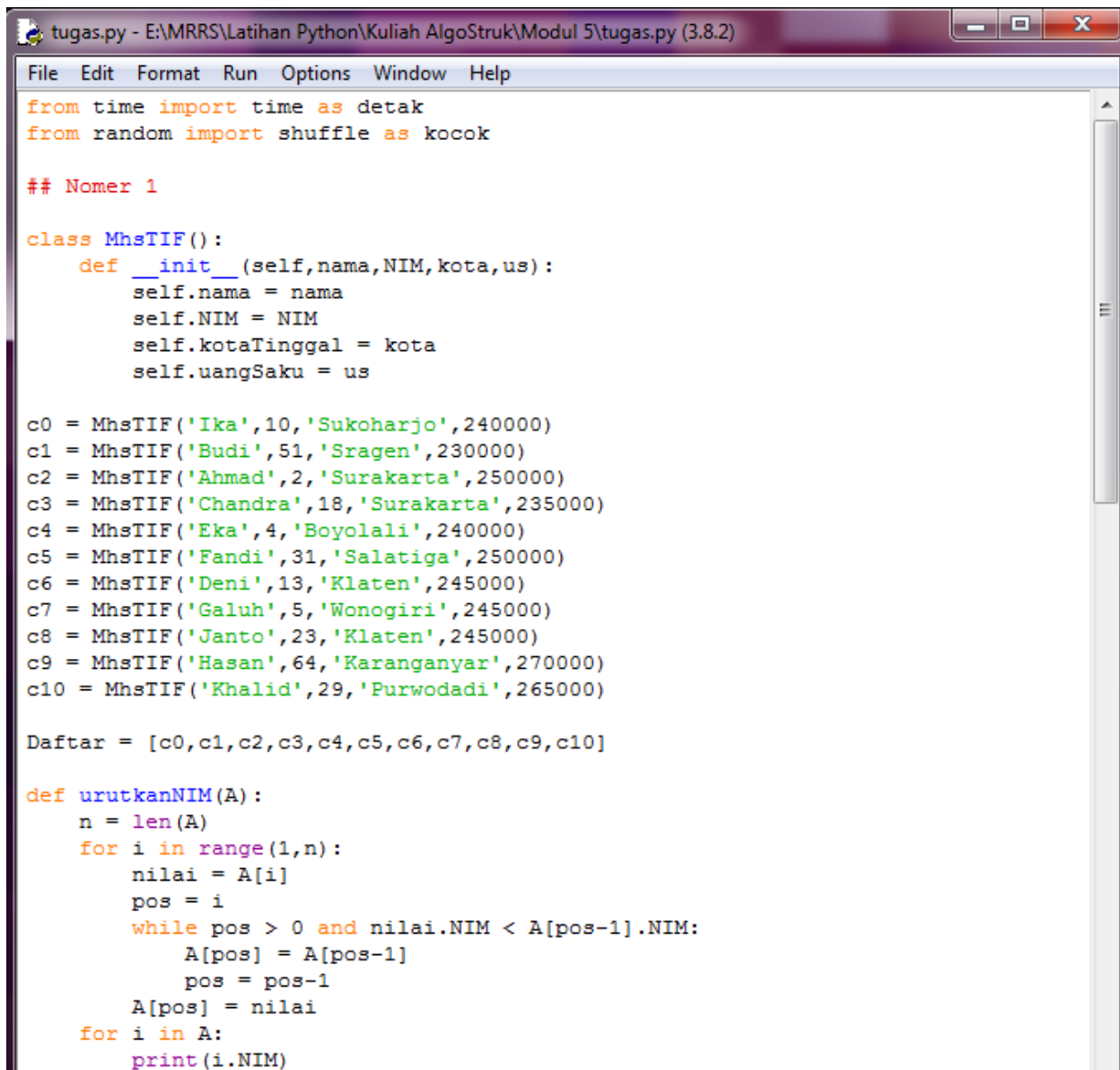
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Kelas : E

Tugas Modul 5

Soal nomer 1



```
tugas.py - E:\MRRS\Latihan Python\Kuliah AlgoStruk\Modul 5\tugas.py (3.8.2)
File Edit Format Run Options Window Help

from time import time as detik
from random import shuffle as kocok

## Nomer 1

class MhsTIF():
    def __init__(self,nama,NIM,kota,us):
        self.nama = nama
        self.NIM = NIM
        self.kotaTinggal = kota
        self.uangSaku = us

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)

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

def urutkanNIM(A):
    n = len(A)
    for i in range(1,n):
        nilai = A[i]
        pos = i
        while pos > 0 and nilai.NIM < A[pos-1].NIM:
            A[pos] = A[pos-1]
            pos = pos-1
        A[pos] = nilai
    for i in A:
        print(i.NIM)
```

```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\MRRS\Latihan Python\Kuliah AlgoStruk\Modul 5\tugas.py =====
=
bubble: 14.7358 detik
selection: 4.34225 detik
insertion: 6.08135 detik
>>> for i in Daftar:
    print(i.NIM)

10
51
2
18
4
31
13
5
23
64
29
>>> urutkanNIM(Daftar)
2
4
5
10
13
18
23
29
31
51
64
```

Soal nomer 2

```
tugas.py - E:\MRRS\Latihan Python\Kuliah AlgoStruk\Modul 5\tugas.py (3.8.2)
File Edit Format Run Options Window Help

## Nomer 2

def urutkanDuaArray(A):
    n = len(A)
    for i in range(n-1):
        for j in range(n-i-1):
            if A[j] > A[j+1]:
                swap(A, j, j+1)
        print(A)

def urutkanDua(a,b):
    total = []
    total.extend(a+b)
    n = len(total)
    for i in range(n-1):
        nilai = total[i]
        pos = i
        while pos > 0 and nilai < total[pos-1]:
            total[pos] = total[pos-1]
            pos = pos-1
        total[pos] = nilai
    print(total)

a = [2,5,8,11,65]
b = [1,3,7,12,43]

>>> a
[2, 5, 8, 11, 65]
>>> b
[1, 3, 7, 12, 43]
>>> urutkanDua(a,b)
[1, 2, 3, 5, 7, 8, 11, 12, 65, 43]
>>> total = []
>>> total = a+b
>>> urutkanDuaArray(total)
[1, 2, 3, 5, 7, 8, 11, 12, 43, 65]
>>>

Ln: 36 Col: 17
```

Soal nomer 3

```
tugas.py - E:\MRRS\Latihan Python\Kuliah AlgoStruk\Modul 5\tugas.py (3.8.2)
File Edit Format Run Options Window Help

## Nomer 3

def swap(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiYangTerkecil(A, dariSini, sampaiSini):
    posisiYangTerkecil = dariSini
    for i in range(dariSini+1, sampaiSini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

def bubbleSort(A):
    n = len(A)
    for i in range(n-1):
        for j in range(n-i-1):
            if A[j] > A[j+1]:
                swap(A,j,j+1)

def selectionSort(A):
    n = len(A)
    for i in range(n-1):
        indexKecil = cariPosisiYangTerkecil(A,i,n)
        if indexKecil != i:
            swap(A,i,indexKecil)

def insertionSort(A):
    n = len(A)
    for i in range(1,n):
        nilai = A[i]
        pos = i
        while pos > 0 and nilai < A[pos-1]:
            A[pos] = A[pos-1]
            pos = pos-1
        A[pos] = nilai

k = [i for i in range(1,6001)]
kocok(k)
.. bub = k.f..

Ln: 64 Col: 0
```

```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\MRRS\Latihan Python\Kuliah AlgoStruk\Modul 5\tugas.py =====
bubble: 14.7358 detik
selection: 4.34225 detik
insertion: 6.08135 detik
```