

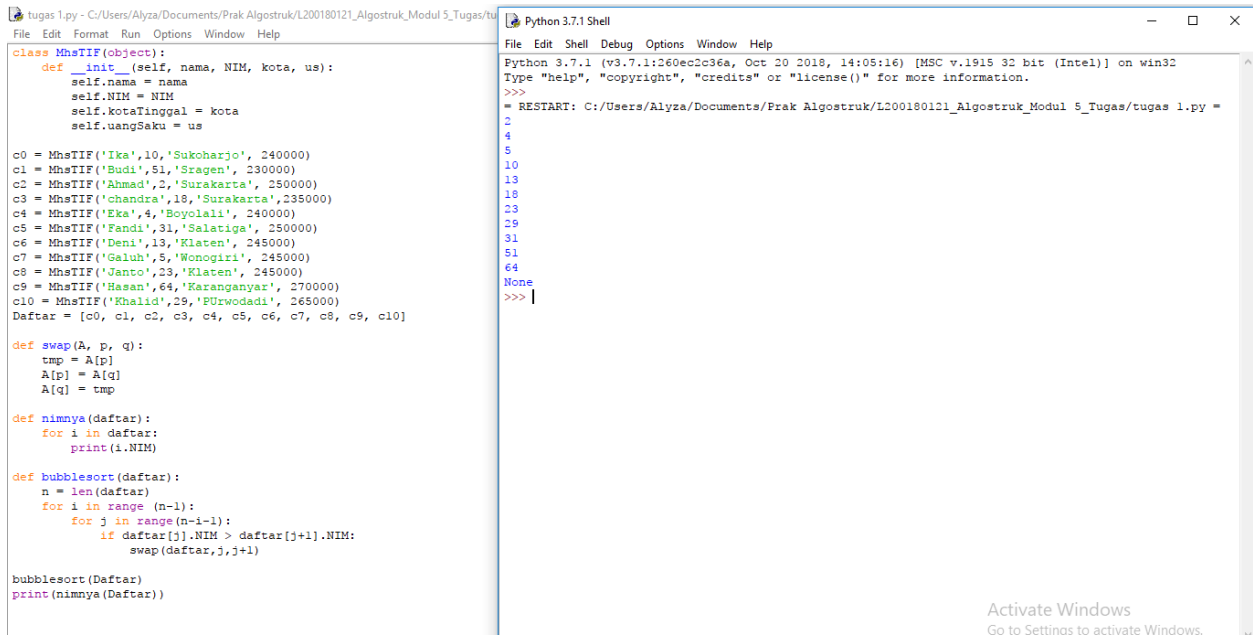
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Kelas : E

## Modul 5

### Tugas 1



```
tugas 1.py - C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tu
File Edit Format Run Options Window Help
class MhsTIF(object):
    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 swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

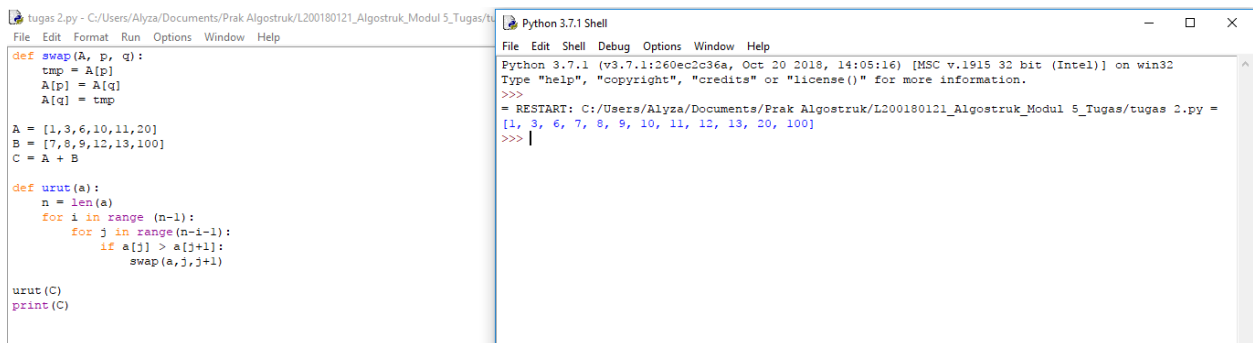
def nimnys(daftar):
    for i in daftar:
        print(i.NIM)

def bubblesort(daftar):
    n = len(daftar)
    for i in range(n-1):
        for j in range(n-i-1):
            if daftar[j].NIM > daftar[j+1].NIM:
                swap(daftar,j,j+1)

bubblesort(Daftar)
print(nimnys(Daftar))

Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:05:16) [MSC v.1915 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tugas 1.py =
2
4
5
10
13
18
23
29
31
51
64
None
>>> |
```

### Tugas 2



```
tugas 2.py - C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tu
File Edit Format Run Options Window Help
def swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

A = [1,3,6,10,11,20]
B = [7,8,9,12,13,100]
C = A + B

def urut(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)

urut(C)
print(C)

Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (v3.7.1:260ec2c36a, Oct 20 2018, 14:05:16) [MSC v.1915 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tugas 2.py =
[1, 3, 6, 7, 8, 9, 10, 11, 12, 13, 20, 100]
>>> |
```

### Tugas 3

```
tugas 3.py - C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tugas 3.py (3.7.1)
File Edit Format Run Options Window Help
def cariPosisiYangTerkecil(A, dariSini, sampaiSini):
    posisiYangTerkecil = dariSini
    for i in range(dariSini+1, sampaiSini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

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

from time import time as detik
from random import shuffle as kocak
k = []
for i in range(1, 6001):
    k.append(i)
kocak(k)
u_bub = k[:]
u_sel = k[:]
u_ins = k[:]

aw=detak();bubbleSort(u_bub);ak=detak();print('bubble: %g detik' %(ak-aw));
aw=detak();selectionSort(u_sel);ak=detak();print('selection: %g detik' %(ak-aw));
aw=detak();insertionSort(u_ins);ak=detak();print('insertion: %g detik' %(ak-aw));
```

```
Python 3.7.1 Shell
File Edit Shell Debug Options Window Help
Python 3.7.1 (tags/v3.7.1:260ec2c36a, Oct 20 2018, 14:05:16) [MSC v.1915 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Alyza/Documents/Prak Algostruk/L200180121_Algostruk_Modul 5_Tugas/tugas 3.py =
bubble: 12.0477 detik
selection: 7.9215 detik
insertion: 0.0100446 detik
>>> |
```

Activate Windows