

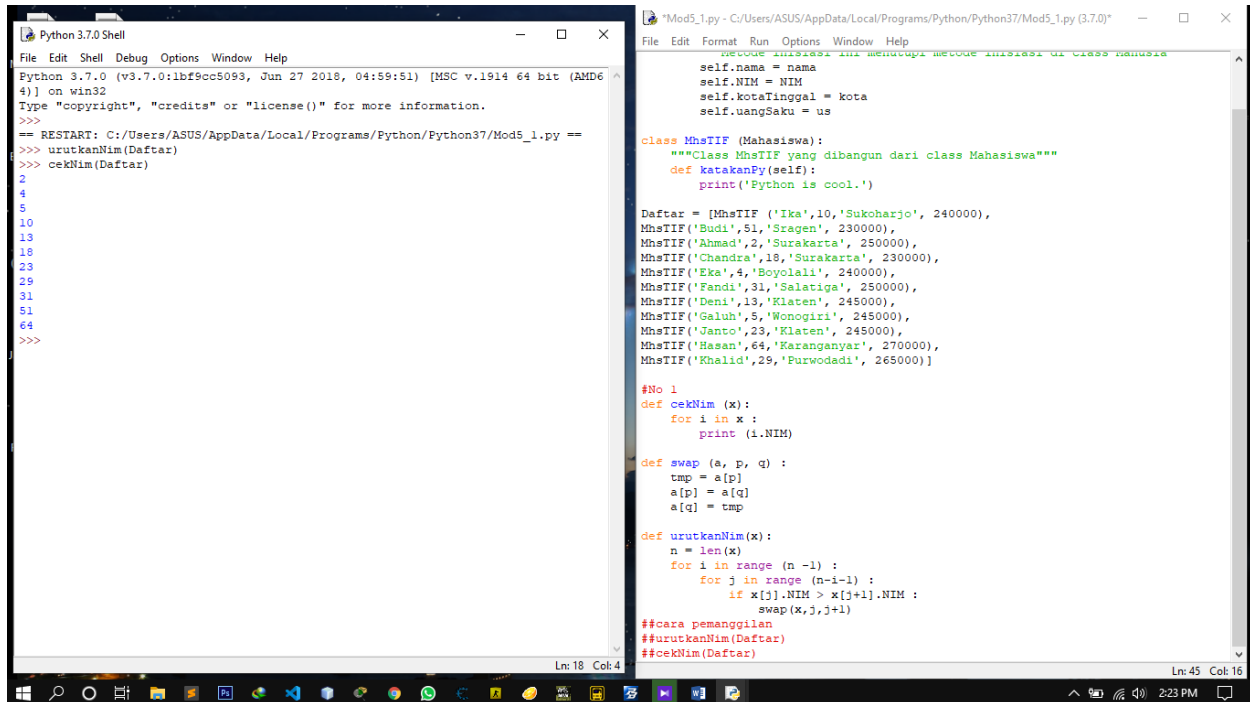
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Kelas : C

Tugas Modul 5

1.



```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_1.py ==
>>> urutkanNim(Daftar)
>>> cekNim(Daftar)
2
4
5
10
13
18
23
29
31
51
64
>>>
```

```
Mod5_1.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_1.py (3.7.0)
File Edit Format Run Options Window Help
#metode inisiasi ini menampung metode inisiasi di class manusia
self.nama = nama
self.NIM = NIM
self.kotaTinggal = kota
self.uangSaku = us

class MhsTIF (Mahasiswa):
    """Class MhsTIF yang dibangun dari class Mahasiswa"""
    def katakanPy(self):
        print('Python is cool.')

Daftar = [MhsTIF ('Ika',10,'Sukoharjo', 240000),
MhsTIF ('Budi',51,'Sragen', 230000),
MhsTIF ('Ahmad',2,'Surakarta', 250000),
MhsTIF ('Chandra',10,'Surakarta', 230000),
MhsTIF ('Eka',4,'Boyolali', 240000),
MhsTIF ('Fandi',31,'Salatiga', 250000),
MhsTIF ('Deni',13,'Klaten', 245000),
MhsTIF ('Galuh',5,'Wonogiri', 245000),
MhsTIF ('Janto',23,'Klaten', 245000),
MhsTIF ('Hasean',64,'Karanganyar', 270000),
MhsTIF ('Khalid',29,'Purwodadi', 265000)]

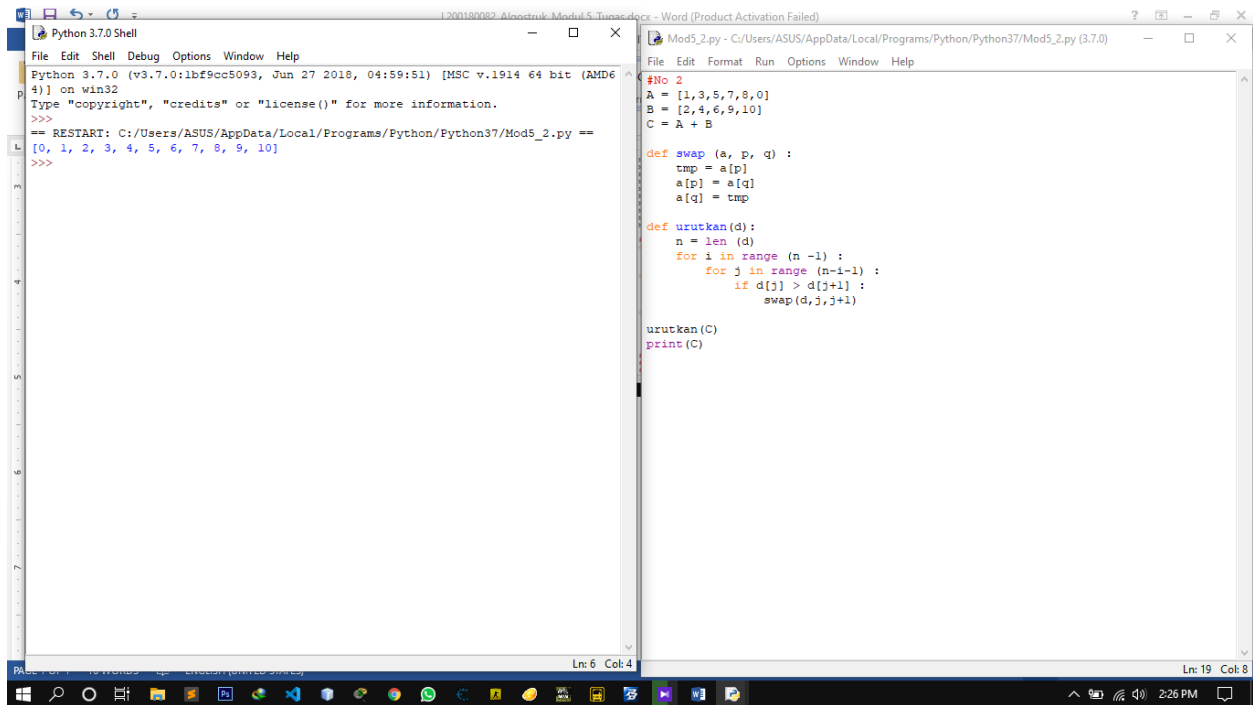
#No 1
def cekNim (x):
    for i in x :
        print (i.NIM)

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

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

##cara pemanggilan
##urutkanNim(Daftar)
##cekNim(Daftar)
```

2.



The screenshot shows two windows. The left window is a Python 3.7.0 Shell with the following code:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_2.py ==
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
>>>
```

The right window is a Python script named Mod5_2.py with the following code:

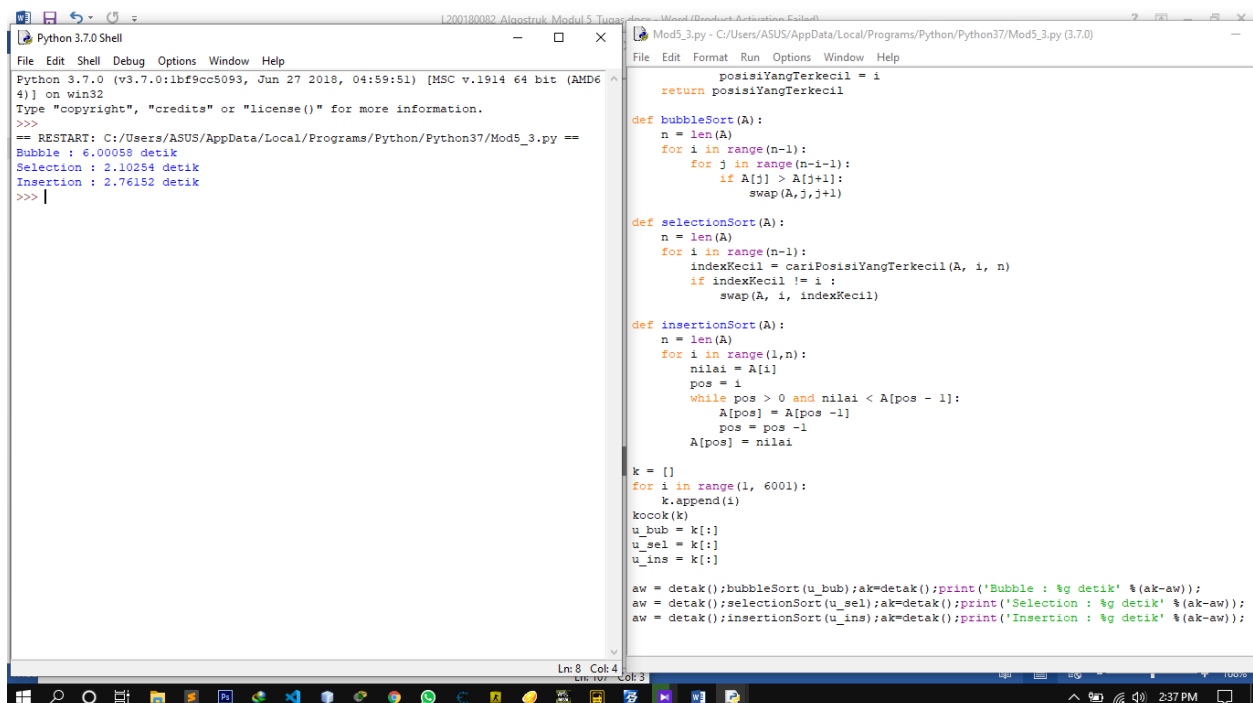
```
Mod5_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_2.py (3.7.0)
File Edit Format Run Options Window Help
#No 2
A = [1,3,5,7,8,0]
B = [2,4,6,9,10]
C = A + B

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

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

urutkan(C)
print(C)
```

3.



The screenshot shows two windows. The left window is a Python 3.7.0 Shell with the following code:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_3.py ==
Bubble : 6.00058 detik
Selection : 2.10254 detik
Insertion : 2.76152 detik
>>> |
```

The right window is a Python script named Mod5_3.py with the following code:

```
Mod5_3.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod5_3.py (3.7.0)
File Edit Format Run Options Window Help
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 = []
for i in range(1, 6001):
    k.append(i)
kacak(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));
```

Paling cepat adalah selection sort(2.1 detik), disusul insertion sort(2.7 detik) dan terakhir bubble sort(6.0 detik)