

Nama : Wahyu Setyaji Rama Dwijaya  
NIM : L200180065  
Kelas : C

## TUGAS MODUL 5

No 1

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/Tugas/Algostruk/tugas_modul5.py =====
>>> urutnim(Daftar)
>>> ceknim(Daftar)
rama L200180065 Sragen
annisa L200180066 Sragen
wulan L200180091 Surakarta
ayudhia L200180096 Palembang
dika L200180097 Bekasi
nayu L200180099 Lampung
rohmad L200180101 Riau
berlian L200180107 Klaten
fandit L200180118 Sragen
dhim L200180148 Sragen
>>> |

tugas_modul5.py - E:/Tugas/Algostruk/tugas_modul5.py (3.7.0)
File Edit Format Run Options Window Help
class MhsTIF(object):
    def __init__(self,nama,nim,tinggal,us):
        self.nama = nama
        self.nim = nim
        self.tinggal = tinggal
        self.us = us

c0 = MhsTIF('rama', 'L200180065', 'Sragen', 150000)
c1 = MhsTIF('berlian', 'L200180107', 'Klaten', 125000)
c2 = MhsTIF('ayudhia', 'L200180096', 'Palembang', 20500)
c3 = MhsTIF('dika', 'L200180097', 'Bekasi', 350000)
c4 = MhsTIF('annisa', 'L200180066', 'Sragen', 500000)
c5 = MhsTIF('nayu', 'L200180099', 'Lampung', 430000)
c6 = MhsTIF('wulan', 'L200180091', 'Surakarta', 450000)
c7 = MhsTIF('rohmad', 'L200180101', 'Riau', 430000)
c8 = MhsTIF('fandit', 'L200180118', 'Sragen', 235000)
c9 = MhsTIF('dhim', 'L200180148', 'Sragen', 350000)

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

# Nomor 1
def swap(a,b,c):
    tmp=a[b]
    a[b]=a[c]
    a[c]=tmp

def ceknim(b):
    for i in b:
        print(i.nama,i.nim,i.tinggal)

def urutnim(a):
    n = len(a)
    for x in range(n-1):
        for y in range(n-x-1):
            if a[y].nim > a[y+1].nim:
                swap(a,y,y+1)

# Nomor 2
a = [13, 18, 25, 44, 66, 78, 89, 107]
b = [2, 4, 5, 10, 13, 18, 23, 29]

#versil
```

No 2

```
Python 3.7.0 Shell
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>>>
===== RESTART: E:/Tugas/Algostruk/tugas_modul5.py =====
>>> #ver 1
>>> urutC(a,b)
[2, 4, 5, 10, 13, 13, 18, 18, 23, 25, 29, 44, 66, 78, 89, 107]
>>> #ver 2
>>> urutC(a,b)
[2, 4, 5, 10, 13, 13, 18, 18, 23, 25, 29, 44, 66, 78, 89, 107]
>>>

tugas_modul5.py - E:/Tugas/Algostruk/tugas_modul5.py (3.7.0)
File Edit Format Run Options Window Help
swap(a,y,y+1)

# Nomor 2
a = [13, 18, 25, 44, 66, 78, 89, 107]
b = [2, 4, 5, 10, 13, 18, 23, 29]

#versil
def urutC(a,b):
    c = a + b
    for i in range(1,len(c)):
        nilai = c[i]
        pos = i
        while pos > 0 and nilai < c[pos - 1]:
            c[pos]=c[pos-1]
            pos -=1
        c[pos]=nilai
    print(c)

#versil2
def urutC(a,b):
    pan1=len(a)
    pan2 = len(b)
    x= 0
    y=0
    c = []
    while x< pan1 and y<pan2:
        if a[x]<b[y]:
            c.append(a[x])
            x+=1
        else:
            c.append(b[y])
            y+=1
    while x<pan1:
        c.append(a[x])
        x+=1
    while y<pan2:
        c.append(b[y])
        y+=1
    return c

# Nomor 3
def swap(A,p,q):
```

### No 3

The image shows a screenshot of a computer screen with two windows open. The left window is a Python 3.7.0 Shell, and the right window is a Python script editor for a file named `tugas_modul5.py`.

**Python 3.7.0 Shell (Left Window):**

```
Python 3.7.0 (tags/v3.7.0:bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\Tugas\Algostruk\tugas_modul5.py =====
Bubble      : 6.04598 detik
Selection   : 3.04664 detik
Insertion    : 3.89108 detik
>>> |
```

**tugas\_modul5.py (Right Window):**

```
File Edit Format Run Options Window Help

if A[1] < A[posisiTerkecil]:
    posisiTerkecil = 1
return posisiTerkecil

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

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

k = [i for i in range(1,6001)]
kocok(k)
u_bub = k[:]
u_sel = k[:]
u_ins = k[:]

aw = detik();bubbleSort(u_bub);ak=detak();print("Bubble      : %g detik"%(ak-aw));
aw = detik();selectionSort(u_sel);ak=detak();print("Selection   : %g detik"%(ak-aw));
aw = detik();insertionSort(u_ins);ak=detak();print("Insertion    : %g detik"%(ak-aw));
```

The taskbar at the bottom shows the Windows Start button, search icon, task view icon, and several application icons including File Explorer, Google Chrome, Photoshop, Premiere Pro, and others. The system tray on the right shows the date and time as 13:33 on 03/04/2020.