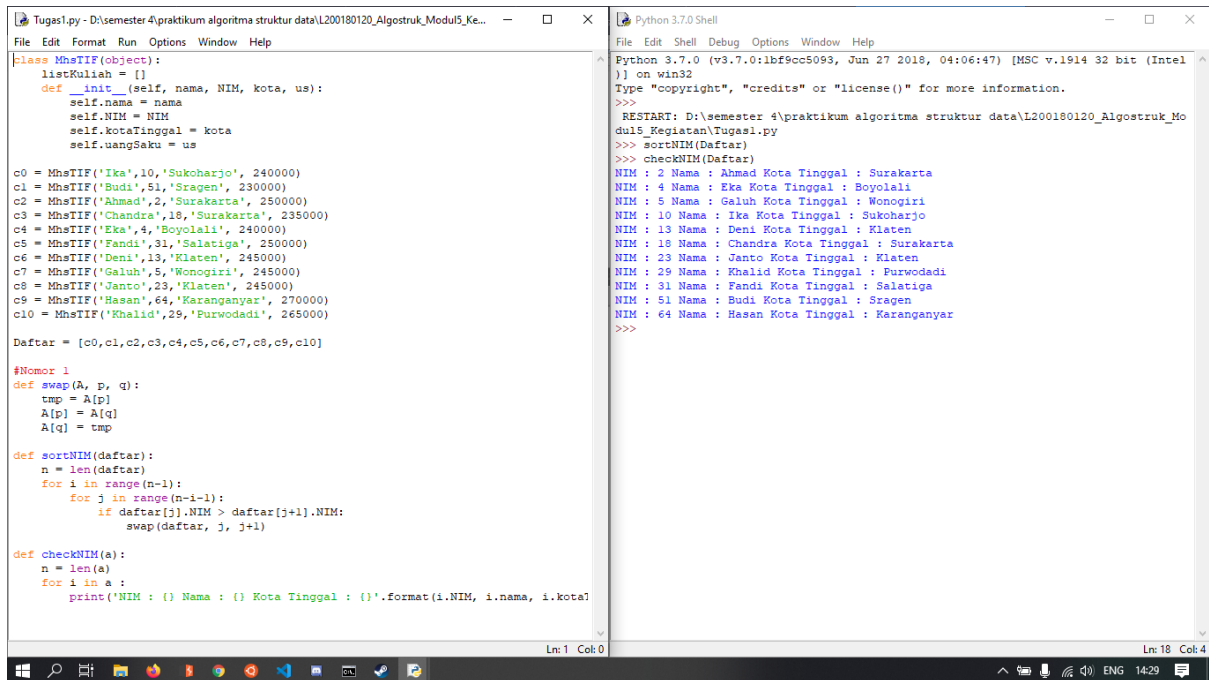


Nama : Maulana Alhif Ikhsan

NIM : L200180120

Kelas : E

Tugas Modul 5



```
Tugas1.py - D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Modul5_Ke...
File Edit Format Run Options Window Help

class MhsTIF(object):
    listKuliah = {}
    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]

#Nomor 1
def swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def sortNIM(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)

def checkNIM(a):
    n = len(a)
    for i in a:
        print('NIM : () Nama : () Kota Tinggal : {}'.format(i.NIM, i.nama, i.kotaTinggal))

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: D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Modul5_Regiatan\Tugas1.py
>>> sortNIM(Daftar)
>>> checkNIM(Daftar)
NIM : 2 Nama : Ahmad Kota Tinggal : Surakarta
NIM : 4 Nama : Eka Kota Tinggal : Boyolali
NIM : 5 Nama : Galuh Kota Tinggal : Wonogiri
NIM : 10 Nama : Ika Kota Tinggal : Sukoharjo
NIM : 13 Nama : Deni Kota Tinggal : Klaten
NIM : 18 Nama : Chandra Kota Tinggal : Surakarta
NIM : 23 Nama : Janto Kota Tinggal : Klaten
NIM : 29 Nama : Khalid Kota Tinggal : Purwodadi
NIM : 31 Nama : Fandi Kota Tinggal : Salatiga
NIM : 51 Nama : Budi Kota Tinggal : Sragen
NIM : 64 Nama : Hasan Kota Tinggal : Karanganyar
>>>
```

```
Tugas2.py - D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Modul5_Ke...
File Edit Format Run Options Window Help
A = [2,34,56,78,89,190]
B = [1,4,12,23,36,76,120]

def sortToC(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
    return c

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: D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Mo
dul5_Regiatan\Tugas2.py
>>> C = sortToC(A, B)
>>> C
[1, 2, 4, 12, 23, 34, 36, 56, 76, 78, 89, 120, 190]
>>>
```

```
Tugas3.py - D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Modul5_Ke...
File Edit Format Run Options Window Help
from time import time as detik
from random import shuffle as kocok

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)
n = len(k)

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: D:\semester 4\praktikum algoritma struktur data\L200180120_Algostruk_Mo
dul5_Regiatan\Tugas3.py
bubble: 5.75187 detik
selection: 2.22648 detik
insertion: 2.55355 detik
>>>
```