TUGAS MODUL 5

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Code no 1

MODUL5(TUGAS).py - E:\Praktikum AlgoPro\MODUL5(TUGAS).py (3.8.2)

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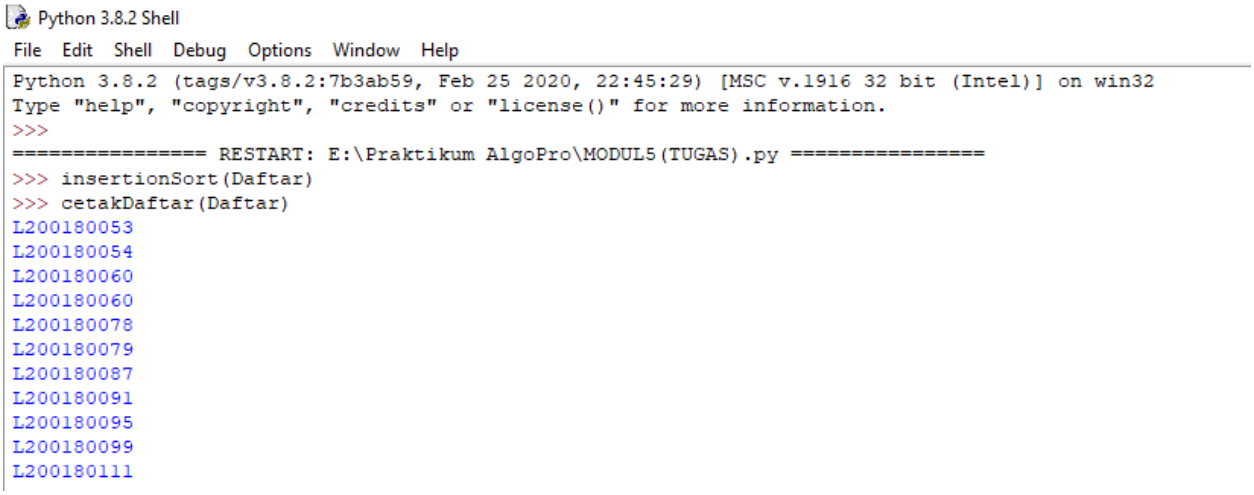
```
###### Nomer 1 ######

class MhsTIF(object):
    def __init__(self, nama, umur, kota, NIM):
        self.nama = nama
        self.umur = umur
        self.kotaTinggal = kota
        self.nim = NIM

    def __str__(self):
        x = self.nim
        return x

    def getnim(self):
        return self.nim

c0 = MhsTIF('Suryo Pramuda', 23, 'Sragen', 'L200180053')
c1 = MhsTIF('Alfian', 19, 'Sumberlawang', 'L200180054')
c2 = MhsTIF('Willi susanti', 19, 'Kudus', 'L200180060')
c3 = MhsTIF('Wulandari', 19, 'Kartasura', 'L200180091')
c4 = MhsTIF('Ayudhia', 19, 'Surakarta', 'L200180095')
c5 = MhsTIF('Annisa', 20, 'Sukoharjo', 'L200180066')
c6 = MhsTIF('Nayu', 20, 'Surakarta', 'L200180099')
c7 = MhsTIF('Akbar', 21, 'Madiun', 'L200180078')
c8 = MhsTIF('Beni', 20, 'Karanganyar', 'L200180079')
c9 = MhsTIF('Rey', 21, 'Mojosongo', 'L200180087')
c10 = MhsTIF('Anggit', 20, 'Surakarta', 'L200180111')

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

def insertionSort(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

def cetakDaftar(d):
```

Hasil no 1


Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:\Praktikum AlgoPro\MODUL5(TUGAS).py ==========
>>> insertionSort(Daftar)
>>> cetakDaftar(Daftar)
L200180053
L200180054
L200180060
L200180060
L200180078
L200180079
L200180087
L200180091
L200180095
L200180099
L200180111

Code no 2

MODUL5(TUGAS).py - E:\Praktikum AlgoPro\MODUL5(TUGAS).py (3.8.2)

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```
c0 = MhsTIF('Suryo Pramuda', 23, 'Sragen', 'L200180053')
c1 = MhsTIF('Alfian', 19, 'Sumberlawang', 'L200180054')
c2 = MhsTIF('Willi susanti', 19, 'Kudus', 'L200180060')
c3 = MhsTIF('Wulandari', 19, 'Kartasura', 'L200180091')
c4 = MhsTIF('Ayudhia', 19, 'Surakarta', 'L200180095')
c5 = MhsTIF('Annisa', 20, 'Sukoharjo', 'L200180066')
c6 = MhsTIF('Nayu', 20, 'Surakarta', 'L200180099')
c7 = MhsTIF('Akbar', 21, 'Madiun', 'L200180078')
c8 = MhsTIF('Beni', 20, 'Karanganyar', 'L200180079')
c9 = MhsTIF('Rey', 21, 'Mojosongo', 'L200180087')
c10 = MhsTIF('Anggit', 20, 'Surakarta', 'L200180111')

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

def insertionSort(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

def cetakDaftar(d):
    for i in d:
        print (i)


###### Nomer 2 ######

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
```

Hasil no 2

```
================ RESTART: E:\Praktikum AlgoPro\MODUL5(TUGAS).py ================
>>> A =[1,2,3,6,8,9,12,15,16,18]
>>> B =[4,5,7,10,11,13,14,17]
>>> C =[]
>>> C.extend(A)
>>> C.extend(B)
>>> print ('Nilai C Adalah', C)
Nilai C Adalah [1, 2, 3, 6, 8, 9, 12, 15, 16, 18, 4, 5, 7, 10, 11, 13, 14, 17]
>>>
```

Code no 3

MODUL5(TUGAS).py - E:\Praktikum AlgoPro\MODUL5(TUGAS).py (3.8.2)

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```
######## Nomer 3 ######
from time import time as detak
from random import shuffle as kocok

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

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 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
```

Hasil no 3

```
================ RESTART: E:\Praktikum AlgoPro\MODUL5(TUGAS).py ================
>>> k = [ i for i in range (1,6001)]
>>> kocok(k)
>>> u_bub = k[:]
>>> u_sel = k[:]
>>> u_ins = k[:]
>>> aw = detak();bubbleSort(u_bub); ak-detak();print('buble : %g detik' %(ak-aw));
Traceback (most recent call last):
  File "<pyshell#15>", line 1, in <module>
    aw = detak();bubbleSort(u_bub); ak-detak();print('buble : %g detik' %(ak-aw));
NameError: name 'ak' is not defined
>>> aw = detak();bubbleSort(u_bub); ak=detak();print('buble : %g detik' %(ak-aw));
buble : 6.32637 detik
>>> aw = detak();selectionSort(u_sel); ak=detak();print('selection : %g detik' %(ak-aw));
selection : 5.15673 detik
>>> aw = detak();insertionSort(u_ins); ak=detak();print('insertion : %g detik' %(ak-aw));
insertion : 6.54757 detik
>>>
```