Nama : Hafidh Putra Andhika

NIM : L200180085

Kelas : D

No 1

TugasModulke5.py - F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py (3.8.2)

File Edit Format Run Options Window Help

```
##No 1
class MhsTIF(object):
    def __init__(self,nama,nim,kota,uangsaku):
        self.nama = nama
        self.nim = nim
        self.kotaTinggal = kota
        self.uangSaku = uangsaku

c0 = MhsTIF('Andhika', 85, 'Solo', 35000)
c1 = MhsTIF('Hafidh', 91, 'Salatiga', 30000)
c2 = MhsTIF('Putra', 100, 'Surakarta', 13000)
c3 = MhsTIF('Hesti', 119, 'Solo', 14000)
c4 = MhsTIF('Retno', 74, 'Boyolali', 15000)
c5 = MhsTIF('Sari', 23, 'Boyolali', 16000)
c6 = MhsTIF('Kesya', 113, 'Klaten', 37000)
c7 = MhsTIF('Diwa', 95, 'Wonogiri', 18000)
c8 = MhsTIF('Ariela', 88, 'Karanganyar', 29000)
c9 = MhsTIF('inez', 114, 'Surakart', 20000)
c10 = MhsTIF('Johan', 27, 'Purwodadi', 21000)

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

def temp(a,b,c):
    tmp=a[b]
    a[b]=a[c]
    a[c]=tmp

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:
                temp(a,y,y+1)

def cekNim(Daftar):
    for i in Daftar:
        print(i.nama,i.nim,i.kotaTinggal)


##No 2
a = [3, 7, 35, 20, 47, 88, 106, 92, 120, 11]
b = [13, 5, 19, 17, 2, 8, 45, 18, 29, 63, 25, 40]

def Array_1(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]
```

Ln: 30 Col: 24

No 2

TugasModulke5.py - F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py (3.8.2)

File Edit Format Run Options Window Help

```
    for i in Daftar:
        print(i.nama,i.nim,i.kotaTinggal)


##No 2
a = [3, 7, 35, 20, 47, 88, 106, 92, 120, 11]
b = [13, 5, 19, 17, 2, 8, 45, 18, 29, 63, 25, 40]

def Array_1(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)

def Array_2(a,b):
    ad0 = len(a)
    ad1 = len(b)
    x= 0
    y=0
    c = []
    while x < ad0 and y < ad1:
        if a[x]<b[y]:
            c.append(a[x])
            x += 1
        else:
            c.append(b[y])
            y += 1
    while x<ad0:
        c.append(a[x])
        x += 1
    while y<ad1:
        c.append(b[y])
        y += 1
    return c

##No 3
def temp(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiTerkecil(A, dariSini, sampaiSini):
    posisiTerkecil = dariSini
    for i in range(dariSini+1, sampaiSini):
        if A[i] < A[posisiTerkecil]:
```

Ln: 18 Col: 39

No 3

TugasModulke5.py - F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py (3.8.2)

File Edit Format Run Options Window Help

```
##No 3
def temp(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiTerkecil(A, dariSini, sampaiSini):
    posisiTerkecil = dariSini
    for i in range(dariSini+1, sampaiSini):
        if A[i] < A[posisiTerkecil]:
            posisiTerkecil = i
    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]:
                temp(A,j,j+1)

def selectionSort(A):
    n = len(A)
    for i in range(n-1):
        indexKecil = cariPosisiTerkecil(A, i, n)
        if indexKecil != i:
            temp(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 detak
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[:]

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

Ln: 18 Col: 39

No 1

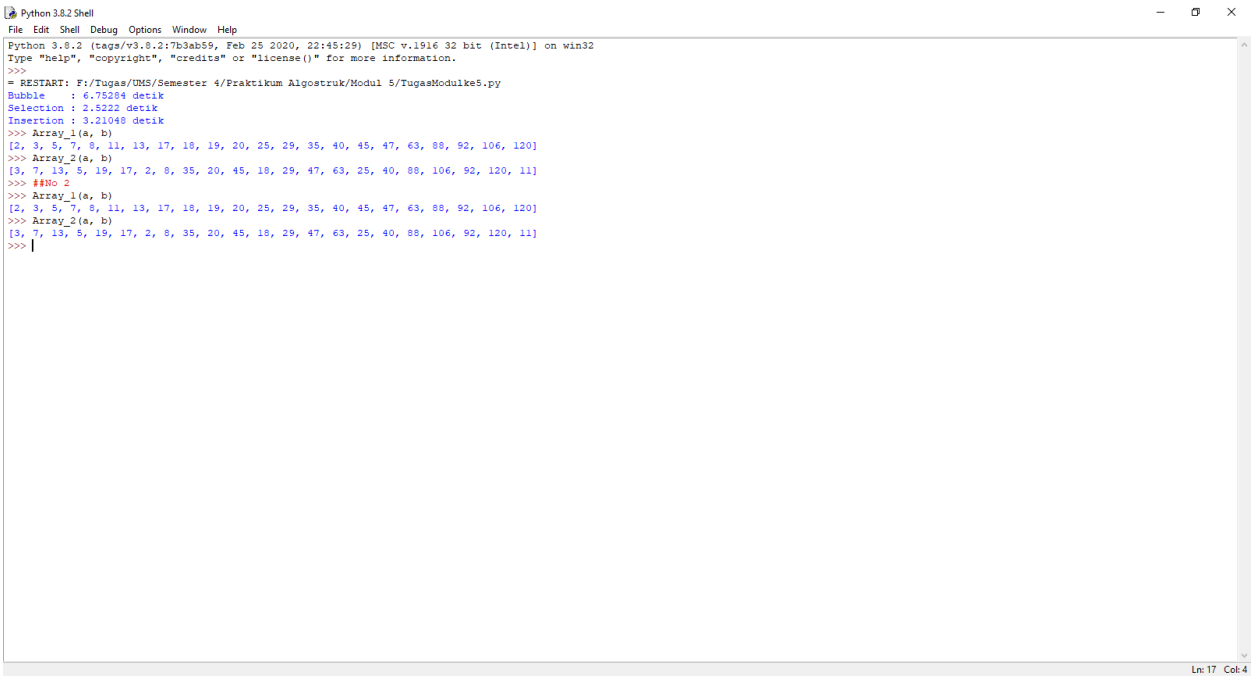
Python 3.8.2 Shell

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: F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py
Bubble    : 6.89328 detik
Selection : 2.64902 detik
Insertion : 3.18407 detik
>>> ##No 1
>>> urutNim(Daftar)
>>> cekNim(Daftar)
Sari 23 Boyolali
Johan 27 Purwodadi
Retno 74 Boyolali
Andhika 85 Solo
Ariela 88 Karanganyar
Hafidh 91 Salatiga
Diwa 95 Wonogiri
Putra 100 Surakarta
Kesya 113 Klaten
inez 114 Surakart
Hesti 119 Solo
>>>
```

Ln: 22 Col: 4

No 2


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: F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py
Bubble : 6.75284 detik
Selection : 2.5222 detik
Insertion : 3.21048 detik
>>> Array_1(a, b)
[2, 3, 5, 7, 8, 11, 13, 17, 18, 19, 20, 25, 29, 35, 40, 45, 47, 63, 88, 92, 106, 120]
>>> Array_2(a, b)
[3, 7, 13, 5, 19, 17, 2, 8, 35, 20, 45, 18, 29, 47, 63, 25, 40, 88, 106, 92, 120, 11]
>>> ##No 2
>>> Array_1(a, b)
[2, 3, 5, 7, 8, 11, 13, 17, 18, 19, 20, 25, 29, 35, 40, 45, 47, 63, 88, 92, 106, 120]
>>> Array_2(a, b)
[3, 7, 13, 5, 19, 17, 2, 8, 35, 20, 45, 18, 29, 47, 63, 25, 40, 88, 106, 92, 120, 11]
>>>
Ln: 17 Col: 4

No 3


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: F:/Tugas/UMS/Semester 4/Praktikum Algostruk/Modul 5/TugasModulke5.py
Bubble : 6.75284 detik
Selection : 2.5222 detik
Insertion : 3.21048 detik
>>>
Ln: 8 Col: 4