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Kelas : D

Tugas Modul 5

No.1

1.py - E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\1.py (3.7.0)

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```
class MhsTif(object):
    def __init__(self, nama, nim, kota, uangsaku):
        self.nama = nama
        self.nim = nim
        self.kotaTinggal = kota
        self.uangSaku = uangsaku

c0 = MhsTif("diah", 12, "Sragen", 240000)
c1 = MhsTif("siwi", 41, "Tegal", 230000)
c2 = MhsTif("amanda", 8, "Surakarta", 250000)
c3 = MhsTif("Chandra", 17, "Magelang", 235000)
c4 = MhsTif("brian", 62, "Boyolali", 240000)
c5 = MhsTif("nisa", 51, "Salatiga", 250000)
c6 = MhsTif("fandi", 15, "Klaten", 245000)
c7 = MhsTif("fauzi", 64, "Wonogiri", 245000)
c8 = MhsTif("putri", 43, "Klaten", 245000)
c9 = MhsTif("nimas", 74, "Karanganyar", 270000)
c10 = MhsTif("viola", 24, "Purwodadi", 265000)

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)
```

Ln: 34 Col: 0

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 (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\1.py ==
>>> urutNim(Daftar)
>>> cekNim(Daftar)
amanda 8 Surakarta
diah 12 Sragen
fandi 15 Klaten
Chandra 17 Magelang
viola 24 Purwodadi
siwi 41 Tegal
putri 43 Klaten
nisa 51 Salatiga
brian 62 Boyolali
fauzi 64 Wonogiri
nimas 74 Karanganyar
>>>
```

Ln: 18 Col: 4

No.2

2.py - E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\2.py (3.7.0)

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```
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
```

Ln: 18 Col: 0

Python 3.7.0 Shell

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```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\2.py ==
>>> 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: 9 Col: 4

No.3

3.py - E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\3.py (3.7.0)

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```
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)
```

3.py - E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\3.py (3.7.0)

File Edit Format Run Options Window Help

```
            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: 49 Col: 0

Python 3.7.0 Shell

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```
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l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: E:\Document dfr\KULIAHH\Semester 4\Prak Algostruk\Modul_5\3.py ==
Bubble    : 12.169 detik
Selection : 4.13965 detik
Insertion : 5.01444 detik
>>>
```

Ln: 8 Col: