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Kelas : E

## Tugas Modul 5

No. 1

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no1.py - D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no1.py (...) Python 3.7.7rc1 Shell
File Edit Format Run Options Window Help File Edit Shell Debug Options Window Help
Python 3.7.7rc1 (tags/v3.7.7rc1:93b7677f9c, Mar 4 2020, 12:05:18) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no1.py
>>> urutNim(Daftar)
>>> cekNim(Daftar)
amanda 8 Surakarta
hesti 12 Palembang
fandi 15 Klaten
Chandra 17 Magelang
viola 24 Purwodadi
Rohana 41 Tegal
putri 43 Klaten
nisa 51 Salatiga
brian 62 Boyolali
fauzi 64 Wonogiri
nimas 74 Karanganyar
>>>

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

c0 = MhsTif("Hesti", 12, "Palembang", 240000)
c1 = MhsTif("Rohana", 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)
```

No 2.

```
no2.py - D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no2.py (...) Python 3.7.7rc1 Shell
File Edit Format Run Options Window Help File Edit Shell Debug Options Window Help
Python 3.7.7rc1 (tags/v3.7.7rc1:93b7677f9c, Mar 4 2020, 12:05:18) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no2.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]
>>>

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.

<pre>no3.py - D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no3.py (...)</pre> <pre>File Edit Format Run Options Window Help</pre> <pre>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] &lt; 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] &gt; 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 &gt; 0 and nilai &lt; 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)]</pre>	<pre>Python 3.7.7rc1 Shell</pre> <pre>File Edit Shell Debug Options Window Help</pre> <pre>Python 3.7.7rc1 (tags/v3.7.7rc1:93b7677f9c, Mar  4 2020, 12:05:18) [MSC v.1900 64 bit (AMD64)] on win 32 Type "help", "copyright", "credits" or "license()" for more information. &gt;&gt;&gt; = RESTART: D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no3.py Bubble : 8.5691 detik Selection : 3.22814 detik Insertion : 4.93317 detik &gt;&gt;&gt;  </pre> <p>Activate Windows Go to Settings to activate Windows.</p> <p>Ln: 8 &lt;</p>
<pre>no3.py - D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no3.py (...)</pre> <pre>File Edit Format Run Options Window Help</pre> <pre>        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] &gt; 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 &gt; 0 and nilai &lt; 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[:]  p = detik();bubbleSort(u_bub);t=detak();print("Bubble      : %g detik" p = detik();selectionSort(u_sel);t=detak();print("Selection : %g det p = detik();insertionSort(u_ins);t=detak();print("Insertion : %g det</pre>	<pre>Python 3.7.7rc1 Shell</pre> <pre>File Edit Shell Debug Options Window Help</pre> <pre>Python 3.7.7rc1 (tags/v3.7.7rc1:93b7677f9c, Mar  4 2020, 12:05:18) [MSC v.1900 64 bit (AMD64)] on win 32 Type "help", "copyright", "credits" or "license()" for more information. &gt;&gt;&gt; = RESTART: D:\KULIAH SEMESTER 4\PRAK_Algostruk\algostruk-hesti\Modul5\Modul_5\no3.py Bubble : 8.5691 detik Selection : 3.22814 detik Insertion : 4.93317 detik &gt;&gt;&gt;  </pre> <p>Activate Windows Go to Settings to activate Windows.</p>