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Kelas : H

MODUL 5 ALGORITMA & STRUKTUR DATA

Nomor 1

```
from kegiatanModul5 import *

class MhsTIF(object):
    def __init__(self, nama, nim, kota, us):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.uangSaku = us
    def __str__(self):
        s = self.nama + ', nim ' + str(self.nim)\
            + '. Tinggal di ' + self.kota\
            + '. Uang saku Rp ' + str(self.uangSalu)\
            + '. tiap bulannya.'
        return s

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]

def urutkanNim(list):
    NIM = []
    for i in list:
        NIM.append(i.nim)
    insertionSort(NIM)
    return NIM
```

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```
>>> urutkanNim(Daftar)
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

Nomor 2

```
from kegiatanModul5 import *

A = [1,2,3,7,8,9]
B = [4,5,6,10,11,12]

def gabungUrut(list1, list2):
    C = list1 + list2
    insertionSort(C)
    return C
```

Python 3.6.5 Shell

File Edit Shell Debug Options Window Help

```
= RESTART: C:/Users/Acer/AppData/Local/Programs/Python/Python36/Modul5No2.py =
>>> gabungUrut(A,B)
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]
>>>
```

Nomor 3

```
from time import time as detak
from random import shuffle as kocok
from kegiatanModul5 import *

k = list(range(1,6001))
kocok(k)
u_bub = k[:]
u_sel = k[:]
u_ins = k[:]

aw=detak();bubbleSort(u_bub);ak=detak();print('bubble: %g detik' %(ak-aw) );
aw=detak();selectionSort(u_bub);ak=detak();print('selection: %g detik' %(ak-aw)
aw=detak();insertionSort(u_bub);ak=detak();print('insertion: %g detik' %(ak-aw)
```

Python 3.6.5 Shell

File Edit Shell Debug Options Window Help

```
= RESTART: C:/Users/Acer/AppData/Local/Programs/Python/Python36/Modul5No3.py =
bubble: 3.79657 detik
selection: 1.25666 detik
insertion: 0.00099802 detik
```

Jadi, hasil dari percobaan diatas menyatakan bahwa *insertion sort* lebih cepat daripada *selection sort*. Sedangkan *bubble sort* adalah paling lama.