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LAPORAN PRAKTIKUM ALGORITMA DAN STRUKTUR DATA

Modul 5

1. Modul5_Nomor1.py - C:/Users/ASUS/Music/Modul5_Nomor1.py (3.7.0)

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```
from Kegiatan_Modul5 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.uangSaku)\
            + '. tiap bulannya.'
        return s

a0 = MhsTIF("Aldy", 175, "Sukoharjo", 290000)
a1 = MhsTIF("Wafiq", 178, "Rembang", 300000)
a2 = MhsTIF("Hanan", 170, "Sragen", 280000)
a3 = MhsTIF("Herlangga", 186, "Karanganyar", 250000)
a4 = MhsTIF("Fatwa", 176, "Boyolali", 310000)
a5 = MhsTIF("Yusuf", 169, "Karanganyar", 255000)
a6 = MhsTIF("Ghani", 185, "Boyolali", 320000)
a7 = MhsTIF("Kevin", 182, "Wonogiri", 270000)
a8 = MhsTIF("Azka", 181, "Karanganyar", 265000)
a9 = MhsTIF("Hanif", 201, "Semarang", 275000)
a10 = MhsTIF("Riyan", 180, "Sukoharjo", 265000)

Daftar = [a0, a1, a2, a3, a4, a5, a6, a7, a8, a9, a10]

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

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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/Modul5_Nomor1.py ==========
>>> urutkanNim(Daftar)
[169, 170, 175, 176, 178, 180, 181, 182, 185, 186, 201]
>>>
```

2.

Modul5_Nomor2.py - C:/Users/ASUS/Music/Modul5_Nomor2.py (3.7.0)

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```
from Kegiatan_Modul5 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 3.7.0 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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/Modul5_Nomor2.py ==========
>>> gabungUrut(A,B)
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]
>>>
```

3.

Modul5_Nomor3.py - C:/Users/ASUS/Music/Modul5_Nomor3.py (3.7.0)

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```
from time import time as detak
from random import shuffle as kocokan
from Kegiatan_Modul5 import *

k = list(range(1,6001))
kocokan(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 3.7.0 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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/Modul5_Nomor3.py ==========
bubble: 12.7447 detik
selection: 4.03223 detik
insertion: 0.00400019 detik
>>>
```

Pada percobaan nomor 3 dapat disimpulkan bahwa *insertion sort* lebih cepat daripada *selection sort*, sedangkan *bubble sort* adalah paling lama.