NAMA   : Muhammad Fadhil Bariz Ardanto

NIM   : L200180200

KELAS   : G
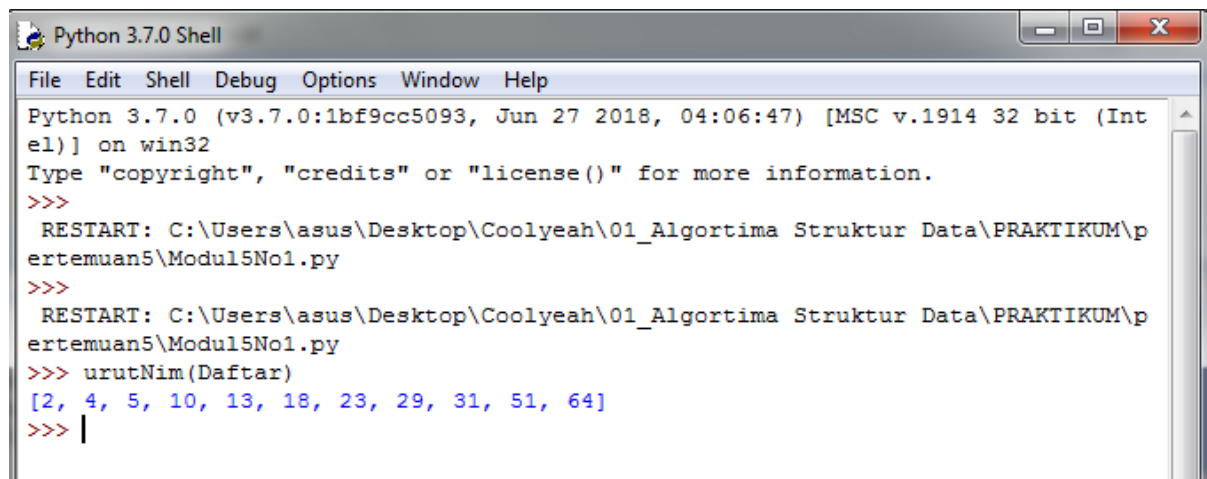
TUGAS MODUL 5

No.1

```
File  Edit  Format  Run  Options  Window  Help
from kegiatanModul5 import *

class MhsTIF(object):
    def __init__(self, nama, nim, kota, saku):
        self.nama = nama
        self.nim = nim
        self.kota = kota
        self.saku = saku
    def __str__(self):
        s = self.nama + ', nim ' + str(self.nim)\
            + '. Tinggal di ' + self.kota\
            + '. Uang saku Rp ' + str(self.saku)\
            + '. 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 urutNim(wadah):
    nim = []
    for i in wadah:
        nim.append(i.nim)
    insertionSort(nim)
    return nim
```
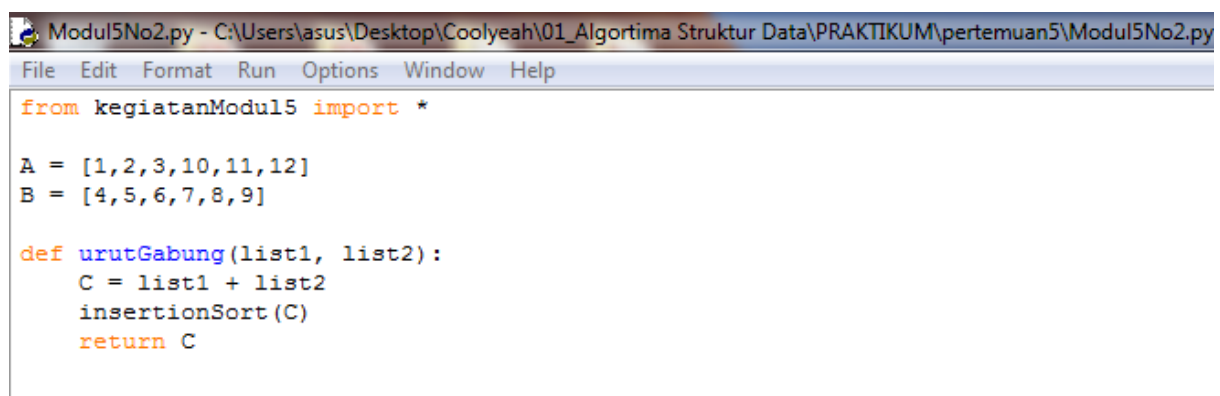
```
Python 3.7.0 Shell

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 (Int
el)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\p
ertemuan5\Modul5No1.py
>>>
 RESTART: C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\p
ertemuan5\Modul5No1.py
>>> urutNim(Daftar)
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```
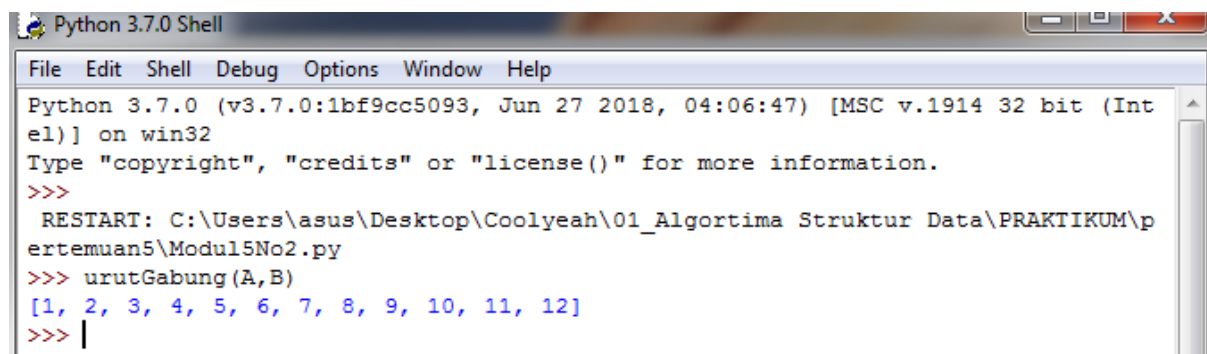
No.2

```
Modul5No2.py - C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\pertemuan5\Modul5No2.py

File  Edit  Format  Run  Options  Window  Help

from kegiatanModul5 import *

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

def urutGabung(list1, list2):
    C = list1 + list2
    insertionSort(C)
    return C
```
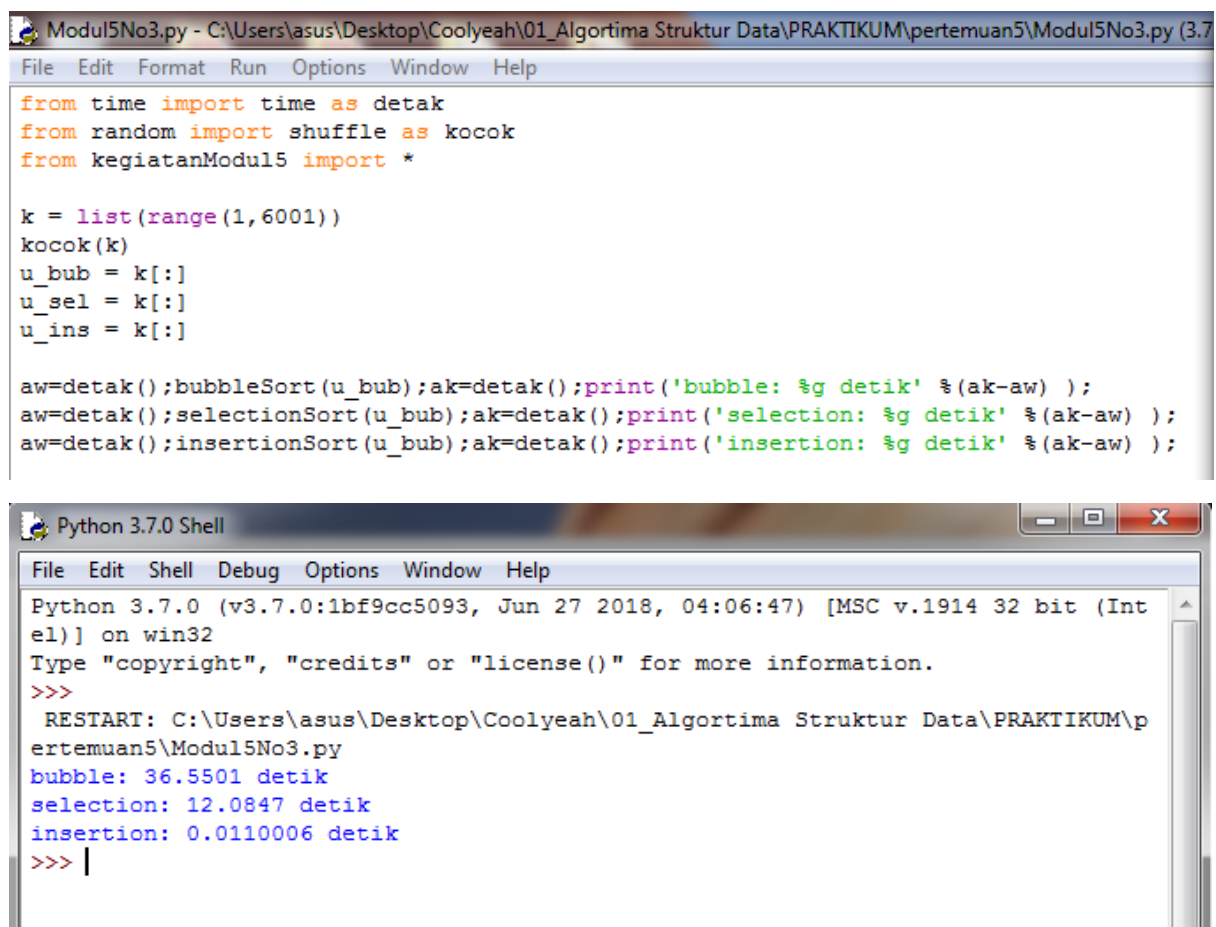
```
Python 3.7.0 Shell

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 (Int
el)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\p
ertemuan5\Modul5No2.py
>>> urutGabung(A,B)
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]
>>>
```

No.3

```
Modul5No3.py - C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\pertemuan5\Modul5No3.py (3.7
File   Edit   Format   Run   Options   Window   Help
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 3.7.0 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 (Int
el)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\asus\Desktop\Coolyeah\01_Algortima Struktur Data\PRAKTIKUM\p
ertemuan5\Modul5No3.py
bubble: 36.5501 detik
selection: 12.0847 detik
insertion: 0.0110006 detik
>>>
```

Insertion sort lebih cepat, diurutan kedua ada selection sort, dan yang paling lambat adalah bubble sort