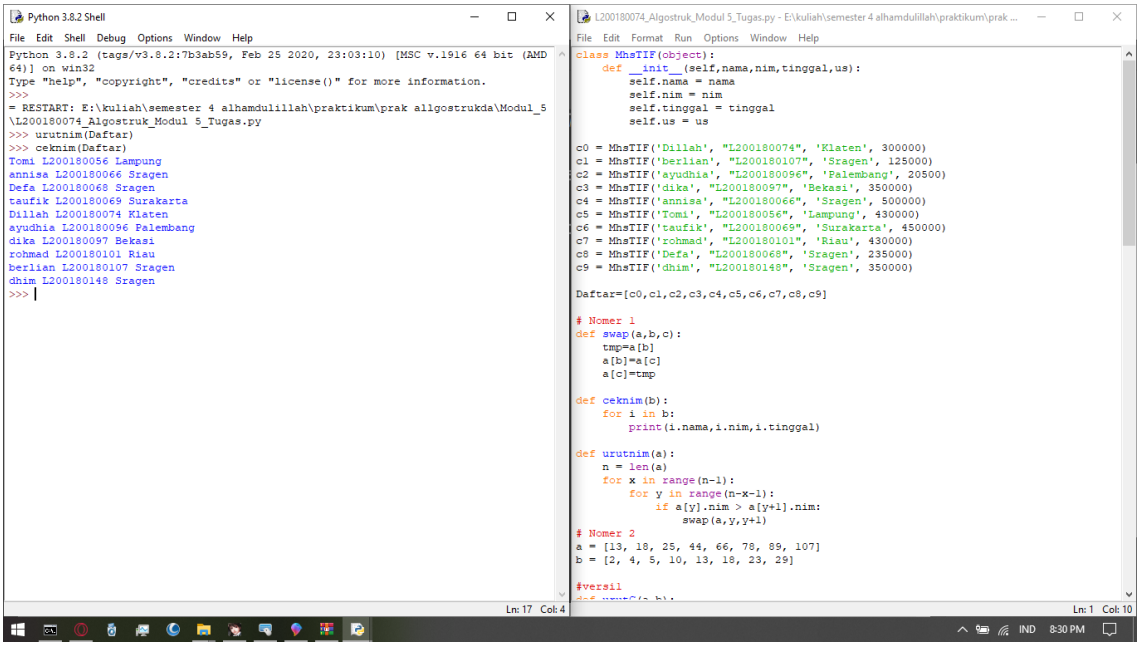
Nama : Abdillah Ahmad
NIM : L200180074
Kelas : C

TUGAS PRAKTIKUM ALGORITMA STRUKTUR DATA MODUL 5

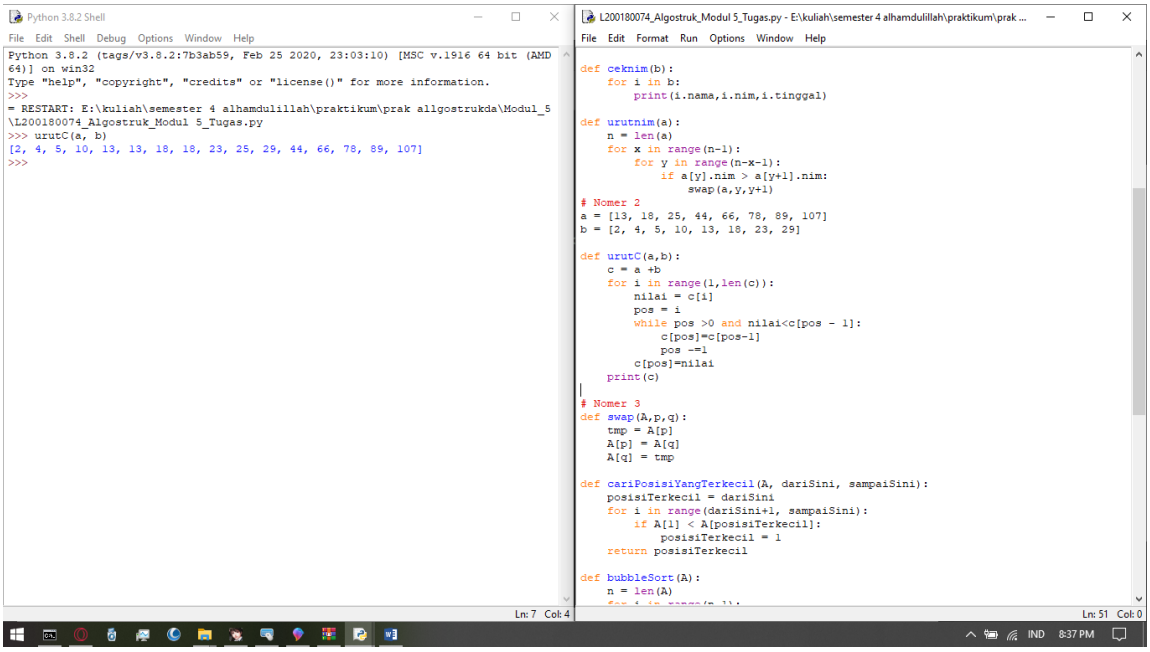
Nomor 1



```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD
64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\kuliah\semester 4 alhamdulillah\praktikum\prak allgostrukda\Modul_5
\L200180074_Algostruk_Modul 5_Tugas.py
>>> urutnim(Daftar)
>>> ceknim(Daftar)
Tomi L200180056 Lampung
annisa L200180066 Sragen
Defa L200180068 Sragen
taufik L200180069 Surakarta
Dillah L200180074 Klaten
ayudhia L200180096 Palembang
dika L200180097 Bekasi
rohmad L200180101 Riau
berlian L200180107 Sragen
dhim L200180148 Sragen
>>>
```

```
L200180074_Algostruk_Modul 5_Tugas.py - E:\kuliah\semester 4 alhamdulillah\praktikum\prak ...
File Edit Format Run Options Window Help
class MhsTIF(object):
    def __init__(self,nama,nim,tinggal,us):
        self.nama = nama
        self.nim = nim
        self.tinggal = tinggal
        self.us = us

c0 = MhsTIF('Dillah', "L200180074", 'Klaten', 300000)
c1 = MhsTIF('berlian', "L200180107", 'Sragen', 125000)
c2 = MhsTIF('ayudhia', "L200180096", 'Palembang', 20500)
c3 = MhsTIF('dika', "L200180097", 'Bekasi', 350000)
c4 = MhsTIF('annisa', "L200180066", 'Sragen', 500000)
c5 = MhsTIF('Tomi', "L200180056", 'Lampung', 430000)
c6 = MhsTIF('taufik', "L200180069", 'Surakarta', 450000)
c7 = MhsTIF('rohmad', "L200180101", 'Riau', 430000)
c8 = MhsTIF('Defa', "L200180068", 'Sragen', 235000)
c9 = MhsTIF('dhim', "L200180148", 'Sragen', 350000)

Daftar=[c0,c1,c2,c3,c4,c5,c6,c7,c8,c9]

# Nomer 1
def swap(a,b,c):
    tmp=a[b]
    a[b]=a[c]
    a[c]=tmp

def ceknim(b):
    for i in b:
        print(i.nama,i.nim,i.tinggal)

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:
                swap(a,y,y+1)
# Nomer 2
a = [13, 18, 25, 44, 66, 78, 89, 107]
b = [2, 4, 5, 10, 13, 18, 23, 29]

#versi1
```

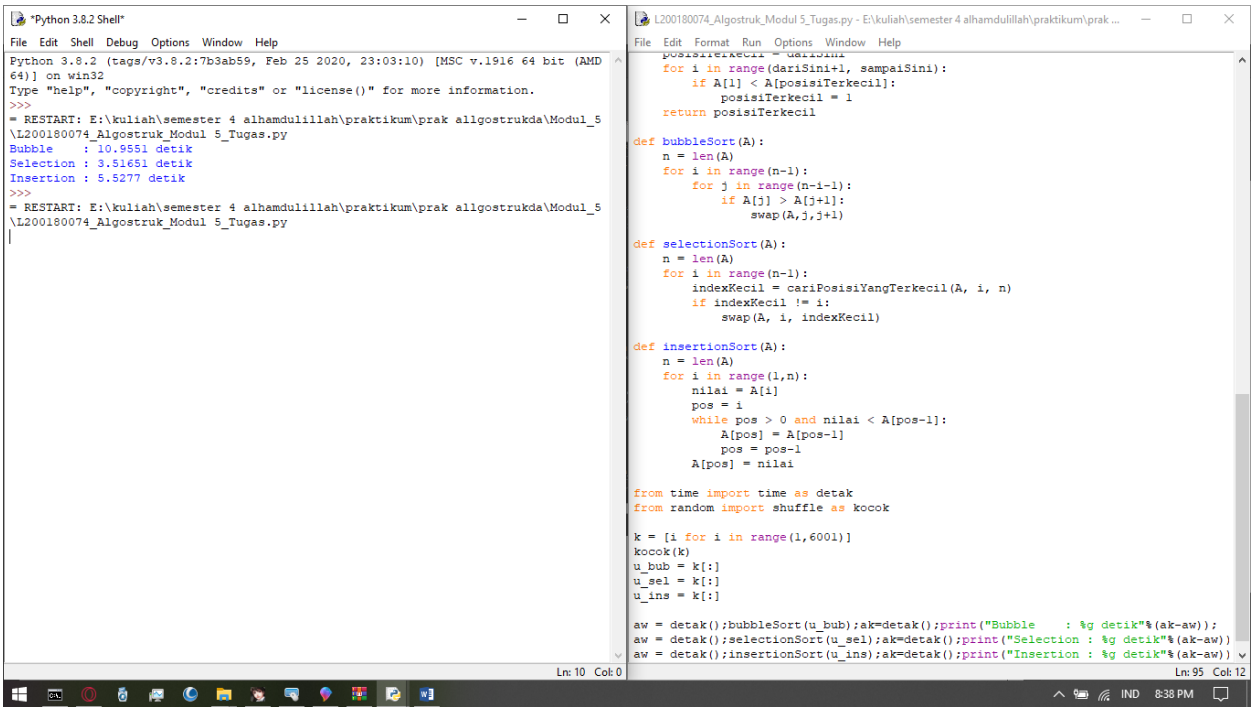
Nomor 2



```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD
64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\kuliah\semester 4 alhamdulillah\praktikum\prak allgostrukda\Modul_5
\L200180074_Algostruk_Modul 5_Tugas.py
>>> urutC(a, b)
[2, 4, 5, 10, 13, 13, 18, 18, 23, 25, 29, 44, 66, 78, 89, 107]
>>>
```

```
L200180074_Algostruk_Modul 5_Tugas.py - E:\kuliah\semester 4 alhamdulillah\praktikum\prak ...
File Edit Format Run Options Window Help
def ceknim(b):
    for i in b:
        print(i.nama,i.nim,i.tinggal)

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:
                swap(a,y,y+1)
# Nomer 2
a = [13, 18, 25, 44, 66, 78, 89, 107]
b = [2, 4, 5, 10, 13, 18, 23, 29]

def urutC(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)

# Nomer 3
def swap(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiYangTerkecil(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)
```

Nomor 3


Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD 64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\kuliah\semester 4 alhamdulillah\praktikum\prak allgostrukda\Modul_5\L200180074_Algostruk_Modul 5_Tugas.py
Bubble : 10.9551 detik
Selection : 3.51651 detik
Insertion : 5.5277 detik
>>>
= RESTART: E:\kuliah\semester 4 alhamdulillah\praktikum\prak allgostrukda\Modul_5\L200180074_Algostruk_Modul 5_Tugas.py
Ln: 10 Col: 0
L200180074_Algostruk_Modul 5_Tugas.py - E:\kuliah\semester 4 alhamdulillah\praktikum\prak ...
File Edit Format Run Options Window Help
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]:
swap(A,j,j+1)
def selectionSort(A):
n = len(A)
for i in range(n-1):
indexKecil = cariPosisiYangTerkecil(A, i, n)
if indexKecil != i:
swap(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[:]
aw = detak();bubbleSort(u_bub);ak=detak();print("Bubble : %g detik"%(ak-aw));
aw = detak();selectionSort(u_sel);ak=detak();print("Selection : %g detik"%(ak-aw))
aw = detak();insertionSort(u_ins);ak=detak();print("Insertion : %g detik"%(ak-aw))
Ln: 95 Col: 12
IND 8:38 PM