Nama : Nadya Ayu Widya

NIM : L200180099

MODUL 5 Praktikum ASD

No. 1

Python 3.7.7 Shell

```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more in
>>>
========== RESTART: D:/Semester 4/Praktikum ASD/Modul 5/Modu
>>> urutNIM(Daftar)
>>> cekNIM(Daftar)
Ika L200180091 Sukoharjo
Budi L200180092 Sragen
Ahmad L200180093 Sukoharjo
Chandra L200180094 Sukoharjo
Eka L200180095 Boyolali
Fandi L200180096 Salatiga
Deni L200180097 Klaten
Galuh L200180098 Wonogiri
Janto L200180099 Klaten
Hasan L200180100 Karanganyar
Khalid L200180101 Purwodadi
>>>
```

Modul 5.py - D:/Semester 4/Praktikum ASD/Modul 5/Modul 5.py (3.7.7)

```
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('Ika', 'L200180091', 'Sukoharjo', 240000)
c1 = MhsTIF('Budi', 'L200180092', 'Sragen', 230000)
c2 = MhsTIF('Ahmad', 'L200180093', 'Sukoharjo', 250000)
c3 = MhsTIF('Chandra', 'L200180094', 'Sukoharjo', 23000)
c4 = MhsTIF('Eka', 'L200180095', 'Boyolali', 240000)
c5 = MhsTIF('Fandi', 'L200180096', 'Salatiga', 230000)
c6 = MhsTIF('Deni', 'L200180097', 'Klaten', 245000)
c7 = MhsTIF('Galuh', 'L200180098', 'Wonogiri', 245000)
c8 = MhsTIF('Janto', 'L200180099', 'Klaten', 245000)
c9 = MhsTIF('Hasan', 'L200180100', 'Karanganyar', 270000)
c10 = MhsTIF('Khalid', 'L200180101', 'Purwodadi', 265000)

Daftar=[c0,c1,c2,c3,c4,c5,c6,c7,c8,c9, c10]

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

def cekNIM(Daftar):
    for i in Daftar:
        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)
##Nomor 2
##a = [13, 18, 25, 44, 66, 78, 89, 107]
##b = [2, 4, 5, 10, 13, 18, 23, 29]
```

No.2

Python 3.7.7 Shell

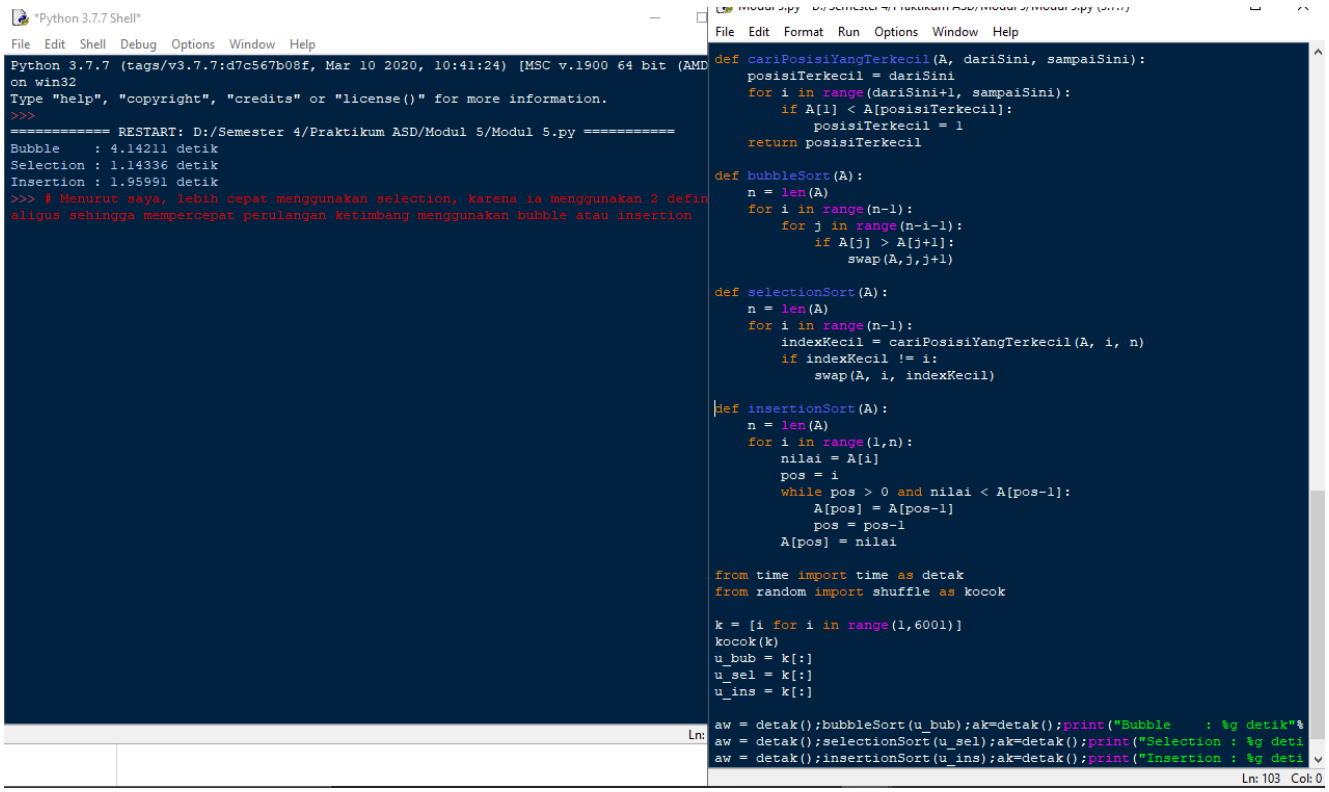
```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [MSC v.19
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more informatio
>>>
========== RESTART: D:/Semester 4/Praktikum ASD/Modul 5/Modul 5.py ==
>>> #Versi 1
>>> urutC(a, b)
[2, 4, 5, 10, 13, 13, 18, 18, 23, 25, 29, 44, 66, 78, 89, 107]
>>> #Versi 2
>>> urutc(a, b)
[2, 4, 5, 10, 13, 13, 18, 18, 23, 25, 29, 44, 66, 78, 89, 107]
>>>
```

Modul 5.py - D:/Semester 4/Praktikum ASD/Modul 5/Modul 5.py (3.7.7)

```
File  Edit  Format  Run  Options  Window  Help
##                swap(a,y,y+1)
##Nomor 2
a = [13, 18, 25, 44, 66, 78, 89, 107]
b = [2, 4, 5, 10, 13, 18, 23, 29]

#versi1
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)

#versi2
def urutc(a,b):
    pan1=len(a)
    pan2 = len(b)
    x= 0
    y=0
    c = []
    while x< pan1 and y<pan2:
        if a[x]<b[y]:
            c.append(a[x])
            x+=1
        else:
            c.append(b[y])
            y+=1
    while x<pan1:
        c.append(a[x])
        x+=1
    while y<pan2:
        c.append(b[y])
        y+=1
    return c

##Nomor 3
```

Ln: 45 Col: 29

No.3


Python 3.7.7 Shell
File Edit Shell Debug Options Window Help
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [MSC v.1900 64 bit (AMD
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: D:/Semester 4/Praktikum ASD/Modul 5/Modul 5.py ==========
Bubble : 4.14211 detik
Selection : 1.14336 detik
Insertion : 1.95991 detik
>>> # Menurut saya, lebih cepat menggunakan selection, karena ia menggunakan 2 defin
aligus sehingga mempercepat perulangan ketimbang menggunakan bubble atau insertion
File Edit Format Run Options Window Help
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)
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"%
aw = detak();selectionSort(u_sel);ak=detak();print("Selection : %g deti
aw = detak();insertionSort(u_ins);ak=detak();print("Insertion : %g deti
Ln: 103 Col: 0