

Nama : Bachtiar Nuhri Kurniawan

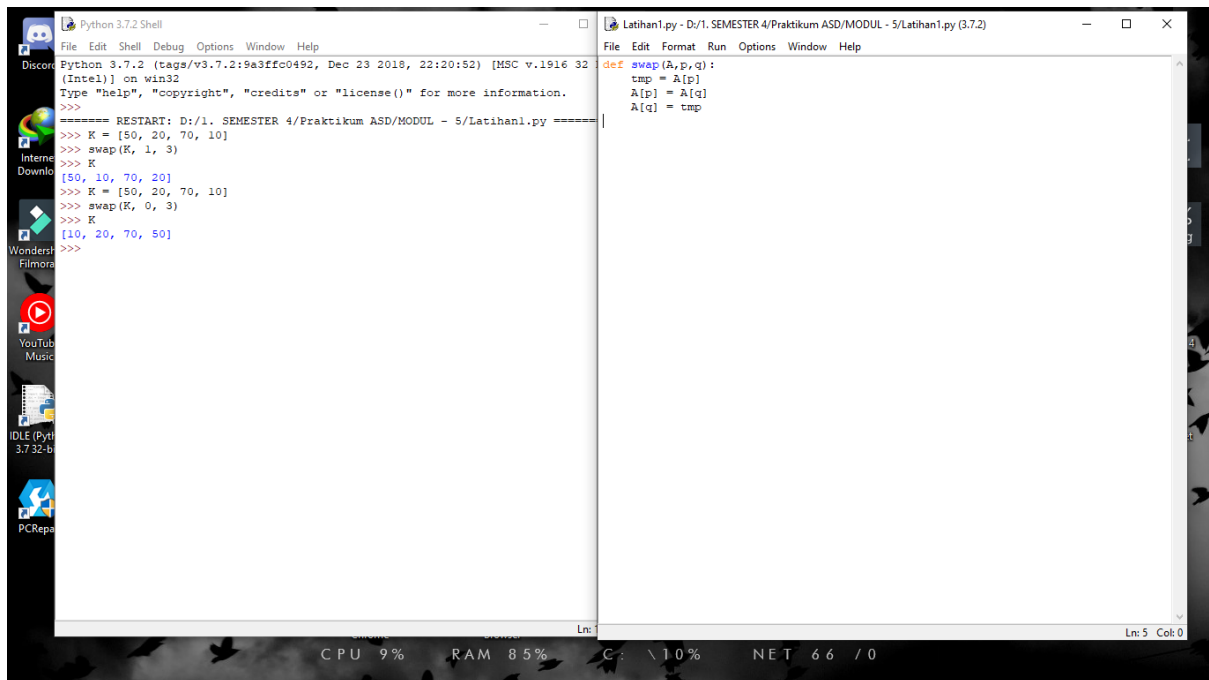
Nim : L200180031

Kelas : B

MODUL 5

Latihan

Tukar posisi



The screenshot shows a Windows desktop with a taskbar containing icons for Discord, Internet Download Manager, Wondershare Filmora, YouTube Music, and PCRepa. Two windows are open: a Python 3.7.2 Shell and a Python script editor titled 'Latihan1.py'.

Python 3.7.2 Shell:

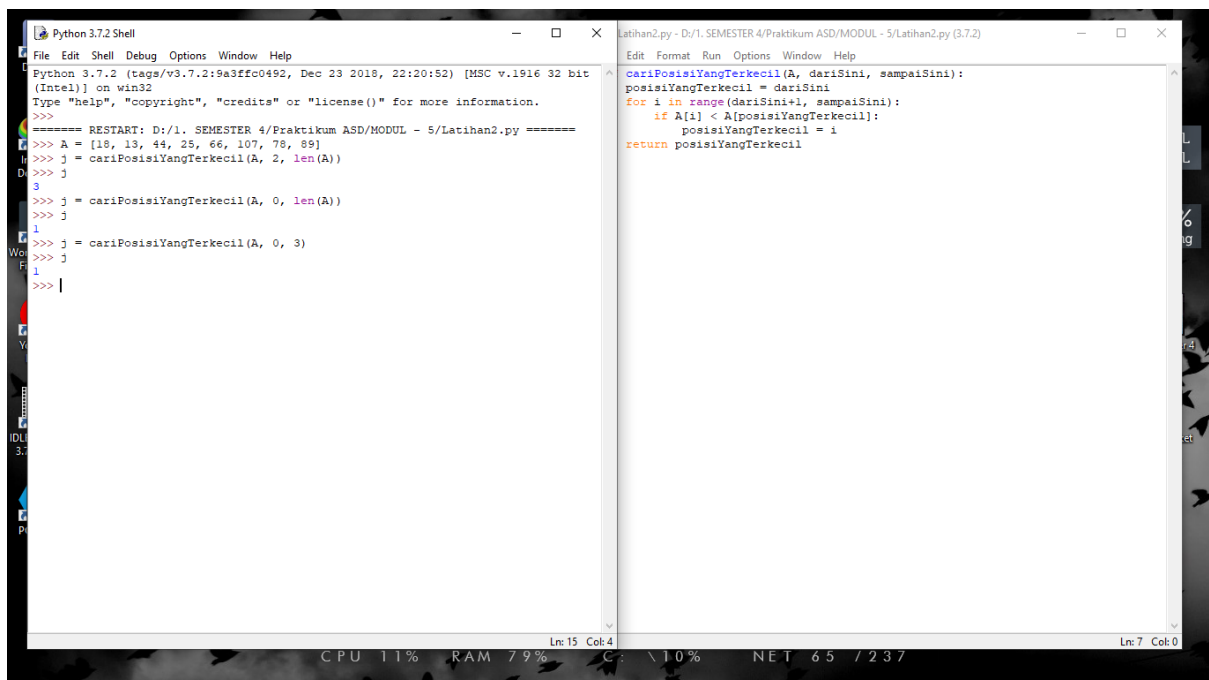
```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan1.py =====
>>> K = [50, 20, 70, 10]
>>> swap(K, 1, 3)
>>> K
[50, 10, 70, 20]
>>> K = [50, 20, 70, 10]
>>> swap(K, 0, 3)
>>> K
[10, 20, 70, 50]
>>>
```

Latihan1.py:

```
def swap(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp
```

The taskbar at the bottom shows CPU 9%, RAM 85%, C: \ 10%, NET 66 / 0.

Cari Posisi



The screenshot shows the same Windows desktop with the same taskbar. Two windows are open: a Python 3.7.2 Shell and a Python script editor titled 'Latihan2.py'.

Python 3.7.2 Shell:

```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan2.py =====
>>> A = [18, 13, 44, 25, 66, 107, 78, 89]
>>> j = cariPosisiYangTerkecil(A, 2, len(A))
>>> j
3
>>> j = cariPosisiYangTerkecil(A, 0, len(A))
>>> j
1
>>> j = cariPosisiYangTerkecil(A, 0, 3)
>>> j
1
>>>
```

Latihan2.py:

```
cariPosisiYangTerkecil(A, dariSini, sampaiSini):
    posisiYangTerkecil = dariSini
    for i in range(dariSini+1, sampaiSini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil
```

The taskbar at the bottom shows CPU 11%, RAM 79%, C: \ 10%, NET 65 / 237.

```
Python 3.7.2 Shell
File Edit Shell Debug Options Window Help
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py =====
>>> print('Average case:', hasil1)
Average case: [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print('Average case:', hasil1)
Average case: [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print('best case:', hasil2)
best case: [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>>

Latihan.py - D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py (3.7.2)
File Edit Format Run Options Window Help
def swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiTerkecil(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)
        return A

worst = [99, 87, 76, 65, 53, 42, 33, 20, 11, 3]
average = [3, 20, 11, 76, 87, 99, 42, 53, 33, 65]
best = [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]

hasil1 = bubbleSort(worst)
hasil2 = bubbleSort(average)
hasil3 = bubbleSort(best)
```

```
Python 3.7.2 Shell
File Edit Shell Debug Options Window Help
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py =====
>>> print(ss1)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print(ss3)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print(ss2)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>>

Latihan.py - D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py (3.7.2)
File Edit Format Run Options Window Help
def swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def cariPosisiTerkecil(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)
        return A

worst = [99, 87, 76, 65, 53, 42, 33, 20, 11, 3]
average = [3, 20, 11, 76, 87, 99, 42, 53, 33, 65]
best = [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]

hasil1 = bubbleSort(worst)
hasil2 = bubbleSort(average)
hasil3 = bubbleSort(best)

def selectionSort(A):
    n = len(A)
    for i in range(n-1):
        indexKecil = cariPosisiTerkecil(A, i, n)
        if indexKecil != i:
            swap(A, i, indexKecil)
    return A

ss1 = selectionSort(worst)
ss2 = selectionSort(average)
ss3 = selectionSort(best)
```

```
Python 3.7.2 Shell
File Edit Shell Debug Options Window Help
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py =====
>>> print(ss3)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print(ss2)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>> print(ss1)
[3, 11, 20, 33, 42, 53, 65, 76, 87, 99]
>>>

Latihan.py - D:/1. SEMESTER 4/Praktikum ASD/MODUL - 5/Latihan.py (3.7.2)
File Edit Format Run Options Window Help
    for j in range(n-1-1):
        if A[j] > A[j+1]:
            swap(A, j, j+1)
    return A

worst = [99, 87, 76, 65, 53, 42, 33, 20, 11, 3]
average = [3, 20, 11, 76, 87, 99, 42, 53, 33, 65]
best = [3, 11, 20, 33, 42, 53, 65, 76, 87, 99]

hasil1 = bubbleSort(worst)
hasil2 = bubbleSort(average)
hasil3 = bubbleSort(best)

def selectionSort(A):
    n = len(A)
    for i in range(n-1):
        indexKecil = cariPosisiTerkecil(A, i, n)
        if indexKecil != i:
            swap(A, i, indexKecil)
    return A

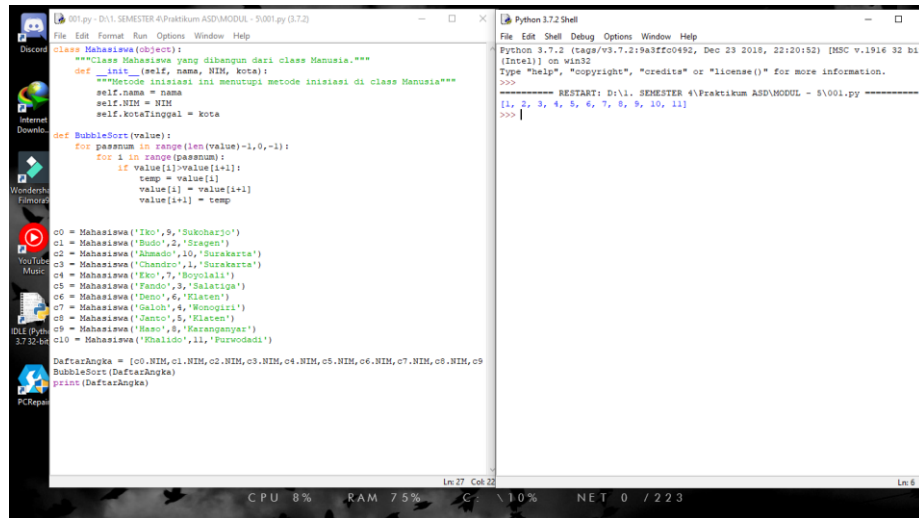
ss1 = selectionSort(worst)
ss2 = selectionSort(average)
ss3 = selectionSort(best)

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
    return A

ss1 = insertionSort(worst)
ss2 = insertionSort(average)
ss3 = insertionSort(best)
```

Tugas

Nomer 1



```
File Edit Format Run Options Window Help
class Mahasiswa(object):
    """Class Mahasiswa yang dibangun dari class Manusia."""
    def __init__(self, nama, NIM, kota):
        """Metode inisiasi ini menutupi metode inisiasi di class Manusia"""
        self.nama = nama
        self.NIM = NIM
        self.kotaTinggal = kota

    def BubbleSort(value):
        for passnum in range(len(value)-1,0,-1):
            for i in range(passnum):
                if value[i]>value[i+1]:
                    temp = value[i]
                    value[i] = value[i+1]
                    value[i+1] = temp

c0 = Mahasiswa('Iko',9,'Sukoharjo')
c1 = Mahasiswa('Budi',2,'Sragen')
c2 = Mahasiswa('Ahmad',10,'Surakarta')
c3 = Mahasiswa('Chandro',1,'Surekarta')
c4 = Mahasiswa('Eko',7,'Bojonegara')
c5 = Mahasiswa('Fandi',3,'Salatiga')
c6 = Mahasiswa('Deno',6,'Klaten')
c7 = Mahasiswa('Guloh',4,'Kecogiri')
c8 = Mahasiswa('Janto',5,'Klaten')
c9 = Mahasiswa('Hano',8,'Karanganyar')
c10 = Mahasiswa('Khalido',11,'Purwodadi')

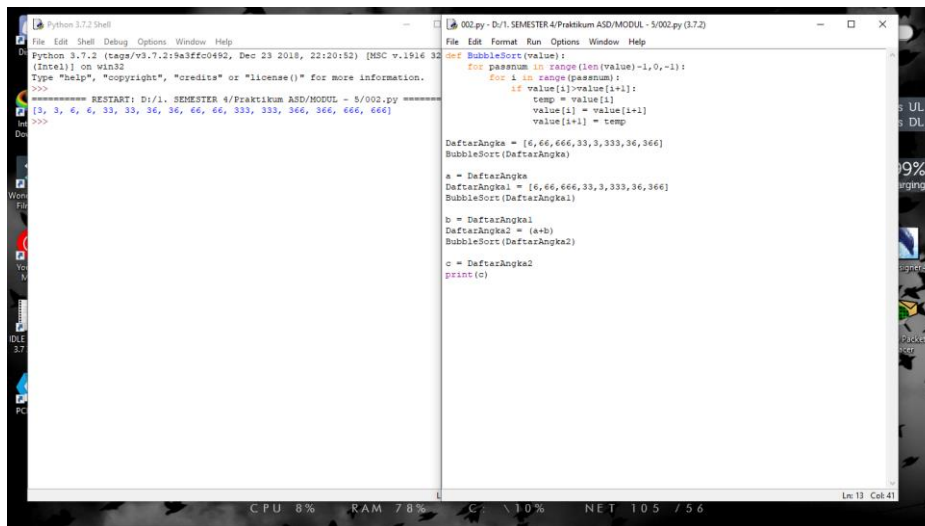
DaftarAngka = [c0.NIM,c1.NIM,c2.NIM,c3.NIM,c4.NIM,c5.NIM,c6.NIM,c7.NIM,c8.NIM,c9.NIM]
BubbleSort(DaftarAngka)
print(DaftarAngka)
```

Python 3.7.2 Shell

```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\1. SEMESTER 4\Praktikum ASD\MODUL - 5\001.py =====
>>> [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]
>>>
```

CPU 8% RAM 75% C:\ 10% NET 0 / 223

Nomer 2



```
File Edit Format Run Options Window Help
def BubbleSort(value):
    for passnum in range(len(value)-1,0,-1):
        for i in range(passnum):
            if value[i]>value[i+1]:
                temp = value[i]
                value[i] = value[i+1]
                value[i+1] = temp

DaftarAngka = [6,66,666,33,3,333,36,366]
BubbleSort(DaftarAngka)

a = DaftarAngka
DaftarAngka1 = [6,66,666,33,3,333,36,366]
BubbleSort(DaftarAngka1)

b = DaftarAngka1
DaftarAngka2 = (a+b)
BubbleSort(DaftarAngka2)

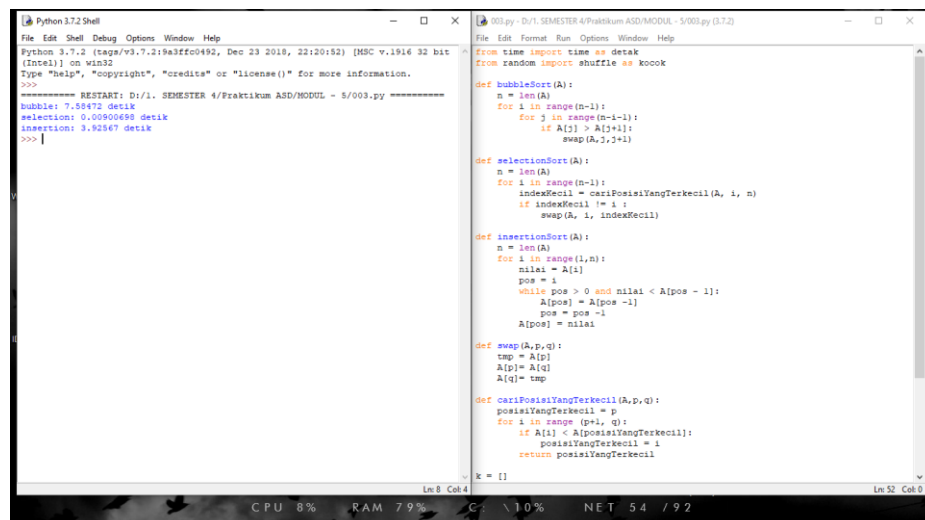
c = DaftarAngka2
print(c)
```

Python 3.7.2 Shell

```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\1. SEMESTER 4\Praktikum ASD\MODUL - 5\002.py =====
>>> [3, 3, 6, 6, 33, 33, 36, 66, 666, 333, 333, 366, 366, 666]
>>>
```

CPU 8% RAM 78% C:\ 10% NET 105 / 56

Nomer 3



```
File Edit Format Run Options Window Help
from time import time as detik
from random import shuffle as kocok

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

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

def cariPosisiYangTerkecil(A,p,q):
    posisiYangTerkecil = p
    for i in range(p+1, q):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

x = []
```

Python 3.7.2 Shell

```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 22:20:52) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\1. SEMESTER 4\Praktikum ASD\MODUL - 5\003.py =====
bubble: 7.58472 detik
selection: 0.009006460 detik
insertion: 3.92567 detik
>>>
```

CPU 8% RAM 79% C:\ 10% NET 54 / 92

