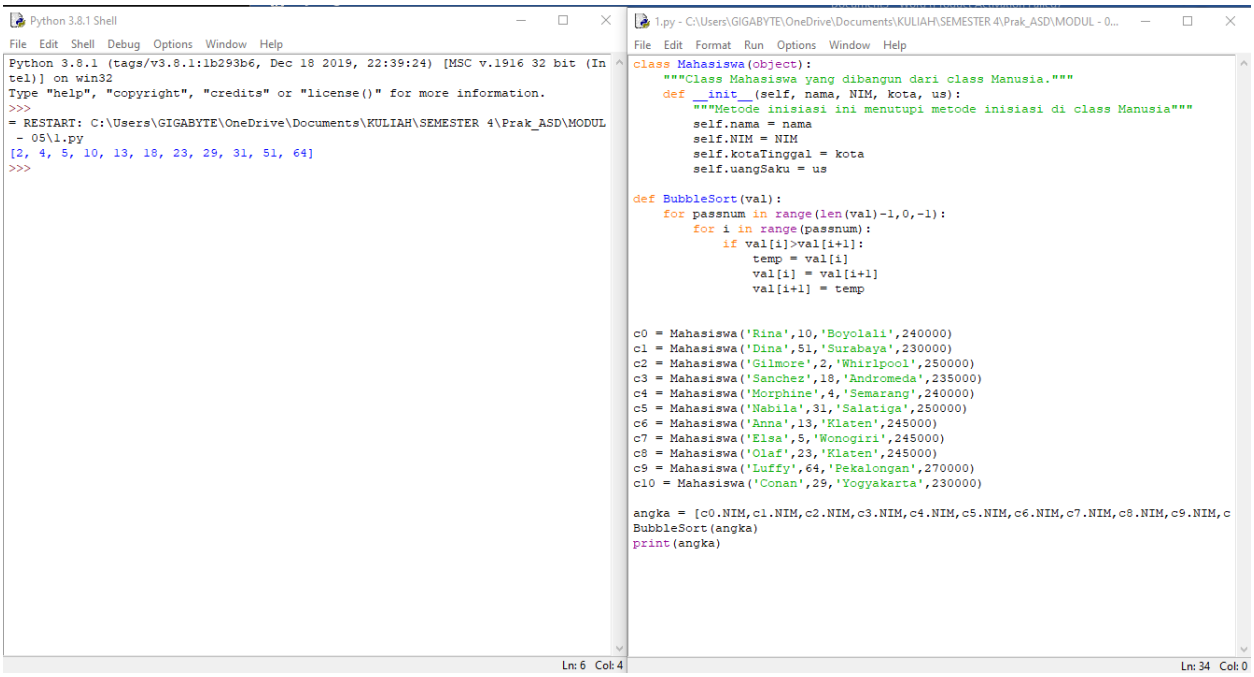
Nama : W. Faisal hari Dewanto
NIM : L200180046
Kelas : B

Modul 5

1.



Python 3.8.1 Shell

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL
 - 05\1.py
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

1.py - C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL - 0...

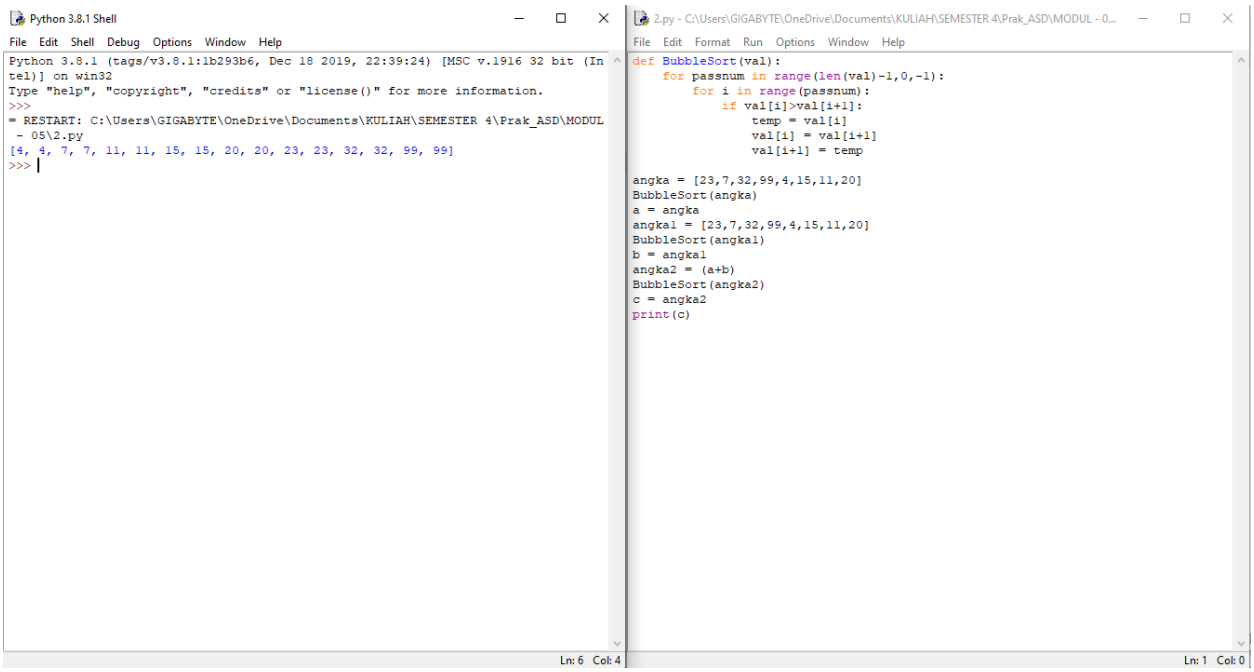
```
class Mahasiswa(object):
    """Class Mahasiswa yang dibangun dari class Manusia."""
    def __init__(self, nama, NIM, kota, us):
        """Metode inisiasi ini menutupi metode inisiasi di class Manusia"""
        self.nama = nama
        self.NIM = NIM
        self.kotaTinggal = kota
        self.uangSaku = us

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


c0 = Mahasiswa('Rina',10,'Boyolali',240000)
c1 = Mahasiswa('Dina',51,'Surabaya',230000)
c2 = Mahasiswa('Gilmore',2,'Whirlpool',250000)
c3 = Mahasiswa('Sanchez',18,'Andromeda',235000)
c4 = Mahasiswa('Morphine',4,'Semarang',240000)
c5 = Mahasiswa('Nabila',31,'Salatiga',250000)
c6 = Mahasiswa('Anna',13,'Klaten',245000)
c7 = Mahasiswa('Elsa',5,'Wonogiri',245000)
c8 = Mahasiswa('Olaf',23,'Klaten',245000)
c9 = Mahasiswa('Luffy',64,'Pekalongan',270000)
c10 = Mahasiswa('Conan',29,'Yogyakarta',230000)

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

2.



Python 3.8.1 Shell

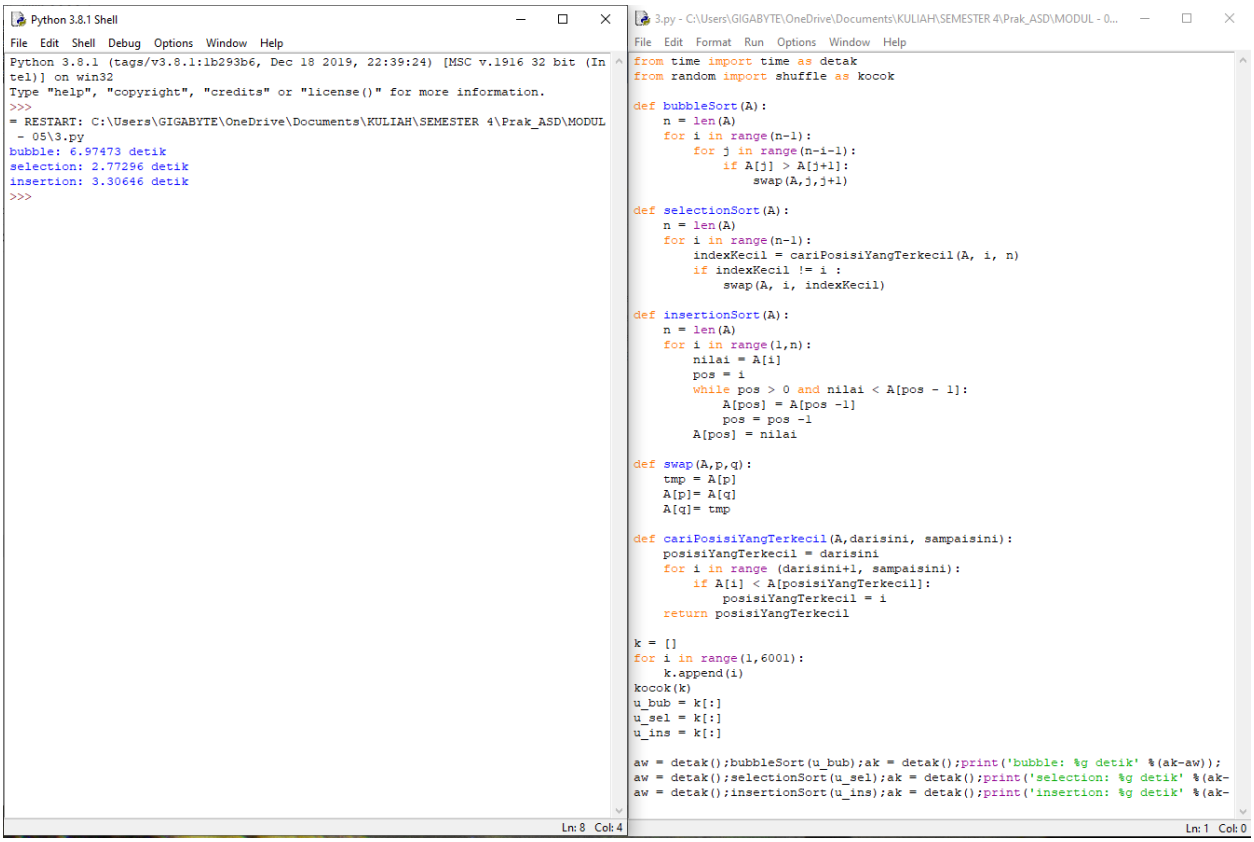
```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL
 - 05\2.py
[4, 4, 7, 7, 11, 11, 15, 15, 20, 20, 23, 23, 32, 32, 99, 99]
>>>
```

2.py - C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL - 0...

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

angka = [23,7,32,99,4,15,11,20]
BubbleSort(angka)
a = angka
angka1 = [23,7,32,99,4,15,11,20]
BubbleSort(angka1)
b = angka1
angka2 = (a+b)
BubbleSort(angka2)
c = angka2
print(c)
```

3.



Python 3.8.1 Shell

File Edit Shell Debug Options Window Help

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL
 - 05\3.py
bubble: 6.97473 detik
selection: 2.77296 detik
insertion: 3.30646 detik
>>>
```

Ln: 8 Col: 4

3.py - C:\Users\GIGABYTE\OneDrive\Documents\KULIAH\SEMESTER 4\Prak_ASD\MODUL - 0...

File Edit Format Run Options Window Help

```
from time import time as detak
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,darisini, sampaisini):
    posisiYangTerkecil = darisini
    for i in range (darisini+1, sampaisini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

k = []
for i in range(1,6001):
    k.append(i)
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 = detak();insertionSort(u_ins);ak = detak();print('insertion: %g detik' %(ak-
```

Ln: 1 Col: 0