

**Nama : Veny Fitriana Isnaini**

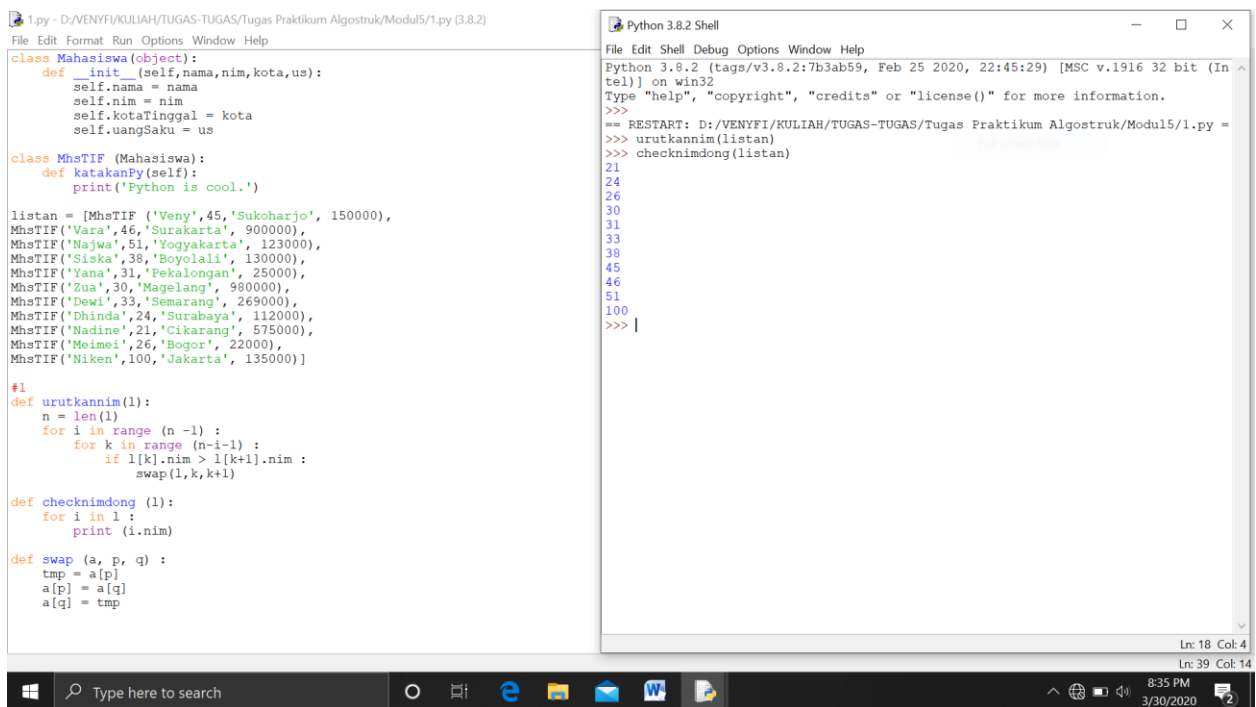
**NIM : L200180045**

**Kelas : B**

## Modul 5

### Pengurutan

1.



The screenshot displays a Python 3.8.2 Shell window with a file named '1.py' open. The file contains a class-based implementation of a sorting algorithm. The class 'Mahasiswa' has attributes 'nama', 'nim', 'kotaTinggal', and 'uangSaku'. The class 'MhsTIF' inherits from 'Mahasiswa' and has a method 'katakanPy' that prints 'Python is cool.'. A list 'listan' is created with 15 instances of 'MhsTIF' with various attributes. A function 'urutkannim' is defined to sort the list based on the 'nim' attribute using bubble sort. Another function 'checknimdong' is defined to print the 'nim' of each element in the list. A 'swap' function is also defined. The execution output shows the list being sorted and the 'nim' values being printed.

```
1.py - D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/1.py (3.8.2)
File Edit Format Run Options Window Help

class Mahasiswa(object):
    def __init__(self,nama,nim,kota,us):
        self.nama = nama
        self.nim = nim
        self.kotaTinggal = kota
        self.uangSaku = us

class MhsTIF (Mahasiswa):
    def katakanPy(self):
        print('Python is cool.')

listan = [MhsTIF ('Veny',45,'Sukoharjo', 150000),
MhsTIF ('Vara',46,'Surakarta', 900000),
MhsTIF ('Najwa',51,'Yogyakarta', 123000),
MhsTIF ('Siska',38,'Boyolali', 130000),
MhsTIF ('Yana',31,'Pekalongan', 25000),
MhsTIF ('Zua',30,'Magelang', 980000),
MhsTIF ('Dewi',33,'Semarang', 269000),
MhsTIF ('Dhinda',24,'Surabaya', 112000),
MhsTIF ('Nadine',21,'Cikarang', 575000),
MhsTIF ('Meimei',26,'Bogor', 22000),
MhsTIF ('Niken',100,'Jakarta', 135000)]

#1
def urutkannim(l):
    n = len(l)
    for i in range (n -1) :
        for k in range (n-i-1) :
            if l[k].nim > l[k+1].nim :
                swap(l,k,k+1)

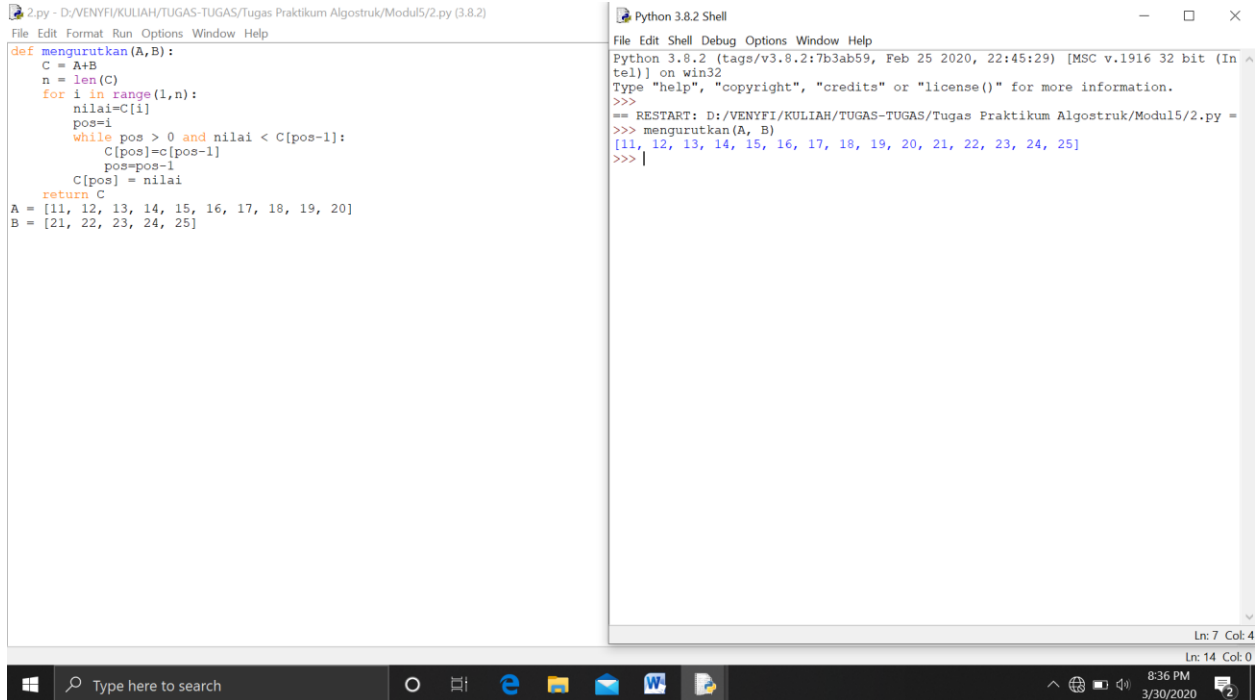
def checknimdong (l):
    for i in l :
        print (i.nim)

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

Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/1.py ==
>>> urutkannim(listan)
>>> checknimdong(listan)
21
24
26
30
31
33
38
45
46
51
100
>>> |
```

2.

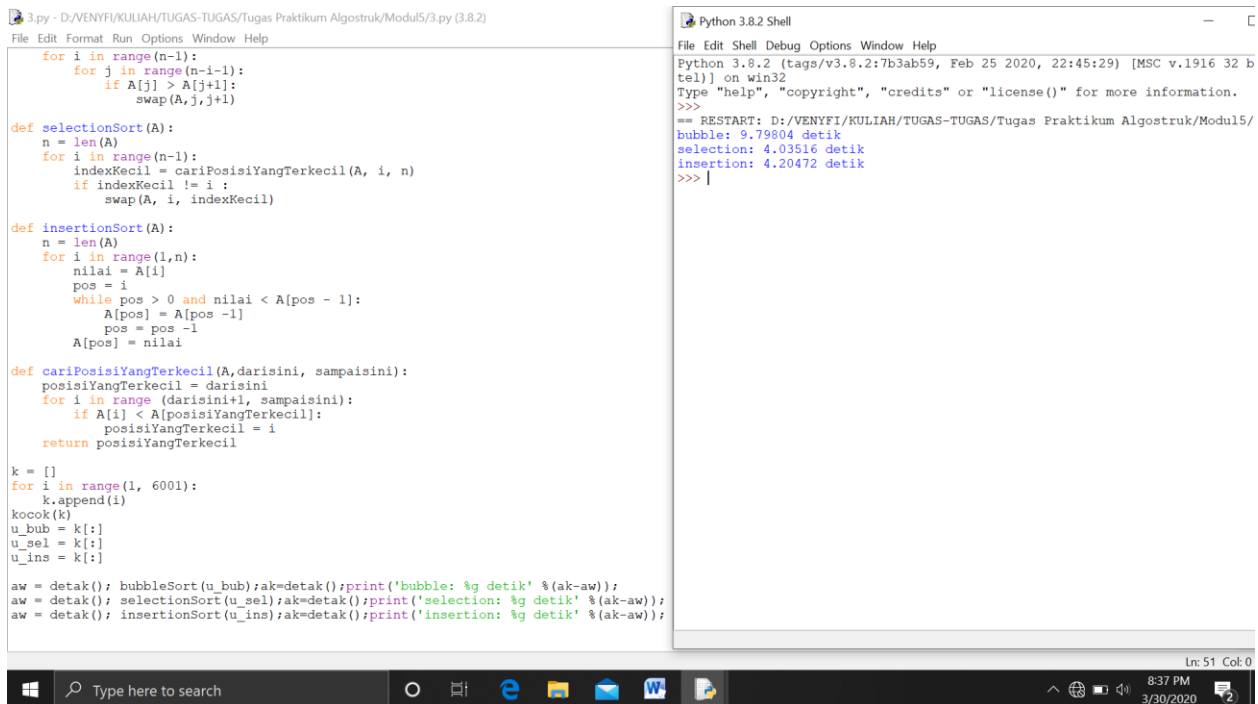


```
2.py - D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/2.py (3.8.2)
File Edit Format Run Options Window Help
def mengurutkan(A,B):
    C = A+B
    n = len(C)
    for i in range(1,n):
        nilai=c[i]
        pos=1
        while pos > 0 and nilai < C[pos-1]:
            C[pos]=c[pos-1]
            pos=pos-1
        C[pos] = nilai
    return C
A = [11, 12, 13, 14, 15, 16, 17, 18, 19, 20]
B = [21, 22, 23, 24, 25]

Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
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Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/2.py =
>>> mengurutkan(A, B)
[11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25]
>>> |

Ln: 7 Col: 4
Ln: 14 Col: 0
```

3.



```
3.py - D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/3.py (3.8.2)
File Edit Format Run Options Window Help
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 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));
aw = detak(); insertionSort(u_ins);ak=detak();print('insertion: %g detik' %(ak-aw));

Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: D:/VENYFI/KULIAH/TUGAS-TUGAS/Tugas Praktikum Algostruk/Modul5/3.py =
bubble: 9.79804 detik
selection: 4.03516 detik
insertion: 4.20472 detik
>>> |

Ln: 51 Col: 0
Ln: 51 Col: 0
```