Nama     : Dwiky Nugraha

NIM      : L200170154

Kelas    : D

Modul    : 5

1. Nomor 1

```python
class MhsTIF():
    def __init__(self,nama,nim,kota,us):
        self.nama=nama
        self.nim=nim
        self.kota=kota
        self.us=us

c0=MhsTIF('Ika',10,'Sukoharjo',240000)
c1=MhsTIF('Budi',51,'Sragen',230000)
c2=MhsTIF('Ahmad',2,'Surakarta',250000)
c3=MhsTIF('Chandra',18,'Surakarta',235000)
c4=MhsTIF('Eka',4,'Boyolali',240000)
c5=MhsTIF('Fandi',31,'Salatiga',250000)
c6=MhsTIF('Deni',13,'Klaten',245000)
c7=MhsTIF('Galuh',5,'Wonogiri',245000)
c8=MhsTIF('Janto',23,'Klaten',245000)
c9=MhsTIF('Hasan',64,'Karanganyar',270000)
c10=MhsTIF('Khalid',29,'Purwodadi',265000)

daftar = [c0.nim, c1.nim, c2.nim, c3.nim, c4.nim, c5.nim, c6.nim, c7.nim, c8.nim,
xx=[2,4,6,1,73,16,22]
def swap(A,x,y):
    tmp=A[x]
    A[x]=A[y]
    A[y]=tmp

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)
    print (A)
```

```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 23:09:28) [MSC v.1916 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================= RESTART: C:/Users/ASUS/Desktop/test run.py =================
>>> bubbleSort(daftar)
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

2. Nomor 2

```python
A=[2,4,10,18,31,51]
B=[5,13,23,29,64]
def gabung(A,B):
    la=len(A); lb=len(B)
    C=list()
    i=0; j=0

    while i<la and j<lb:
        if A[i]<B[j]:
            C.append(A[i])
            i+=1
        else:
            C.append(B[j])
            j+=1

    while i<la:
        C.append(A[i])
        i+=1
    while i<lb:
        C.append(B[j])
        j+=1

    return C
```
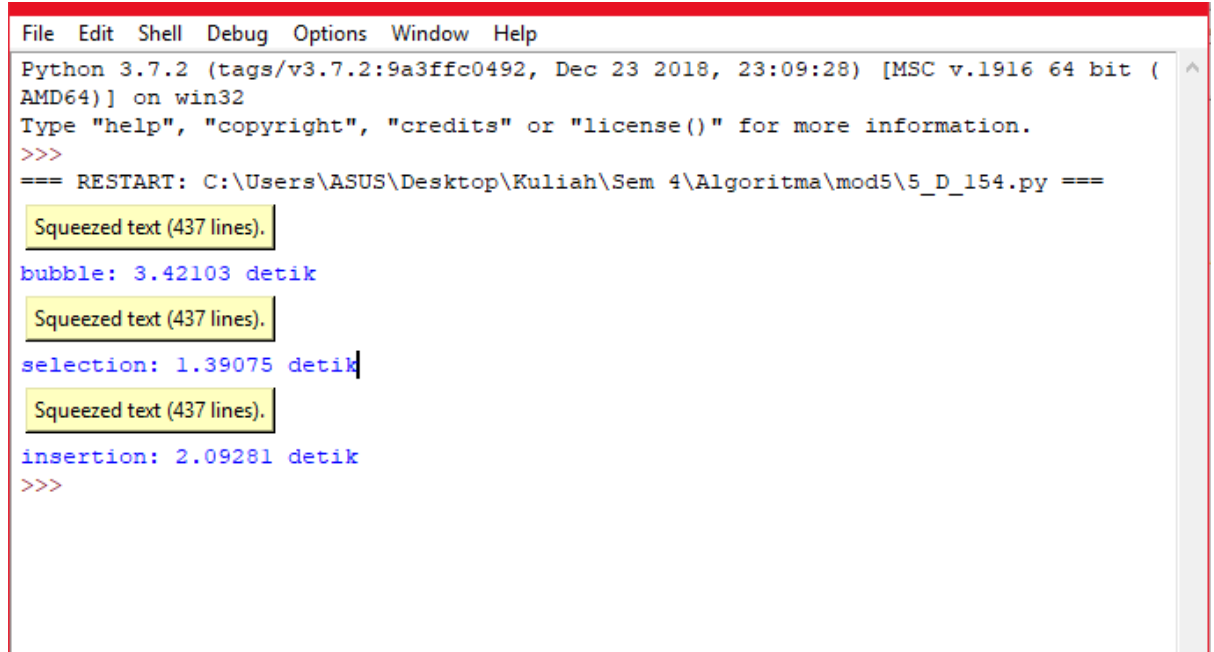
```
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 23:09:28) [MSC v.1916 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================= RESTART: C:/Users/ASUS/Desktop/test run.py =================
>>> gabung(A,B)
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51]
>>>
```

3. Nomor 3

```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.2 (tags/v3.7.2:9a3ffc0492, Dec 23 2018, 23:09:28) [MSC v.1916 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:\Users\ASUS\Desktop\Kuliah\Sem 4\Algoritma\mod5\5_D_154.py ===
Squeezed text (437 lines).
bubble: 3.42103 detik
Squeezed text (437 lines).
selection: 1.39075 detik
Squeezed text (437 lines).
insertion: 2.09281 detik
>>>
```