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Modul-5

1.

```
1.py - D:/Tugas woyyy/Tugas asd/1.py (3.7.0)
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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 ('Bagus',175,'Surakarta', 130000),
MhsTIF('Doni',36,'Surabaya', 890000),
MhsTIF('Dono',29,'Klaten', 123000),
MhsTIF('Diaz',30,'Kudus', 230000),
MhsTIF('Sony',35,'Sleman', 220000),
MhsTIF('Yoga',31,'Magelang', 980000),
MhsTIF('Agus',34,'Semarang', 267000),
MhsTIF('Tita',28,'Surakarta', 212000),
MhsTIF('Subagyo',25,'Wonogiri', 975000),
MhsTIF('Tono',27,'Bekasi', 21000),
MhsTIF('Justin',226,'Rembang', 125000)]

#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 3.7.0 Shell
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Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/Tugas woyyy/Tugas asd/1.py =====
>>> urutkannim(l)
Traceback (most recent call last):
  File "<cpyshell180>", line 1, in <module>
    urutkannim(l)
NameError: name 'l' is not defined
>>> urutkannim(listan)
>>> checknimdong(listan)
25
26
27
28
29
30
31
34
35
36
175
226
>>>
```

2.

```
l.py - D:/Tugas woyyy/Tugas asd/l.py (3.7.0)
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## 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 checkmimdong(l):
##    for i in l:
##        print(i.nim)
##
##def swap(a, p, q):
##    tmp = a[p]
##    a[p] = a[q]
##    a[q] = tmp
##
##2
def mengurutkan(A,B):
    C = A+B
    n = len(C)
    for i in range(1,n):
        nilai=C[i]
        pos=i
        while pos > 0 and nilai < C[pos-1]:
            C[pos]=C[pos-1]
            pos=pos-1
        C[pos] = nilai
    return C
A = [21,23,25,27,29]
B = [31,33,35,37]

###3
from time import time as detik
from random import shuffle as kocok
def swap(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = 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)
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[:]
as = detik()
bubbleSort(u_bub)
asudetak()
print("bubble: %.2f detik" % (asudetak()-as))
print("selection: %.2f detik" % (asudetak()-as))
print("insertion: %.2f detik" % (asudetak()-as))

Python 3.7.0 Shell
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>>>
===== RESTART: D:/Tugas woyyy/Tugas asd/l.py =====
>>> mengurutkan(A,B)
[21, 23, 25, 27, 29, 31, 33, 35, 37]
>>>
```

3.

```
l.py - D:/Tugas woyyy/Tugas asd/l.py (3.7.0)
File Edit Format Run Options Window Help
###3
from time import time as detik
from random import shuffle as kocok
def swap(A,p,q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = 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)
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[:]
as = detik()
bubbleSort(u_bub)
asudetak()
print("bubble: %.2f detik" % (asudetak()-as))
print("selection: %.2f detik" % (asudetak()-as))
print("insertion: %.2f detik" % (asudetak()-as))

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>>>
===== RESTART: D:/Tugas woyyy/Tugas asd/l.py =====
>>>
bubble: 7.75932 detik
selection: 2.75513 detik
insertion: 2.833 detik
>>>
```