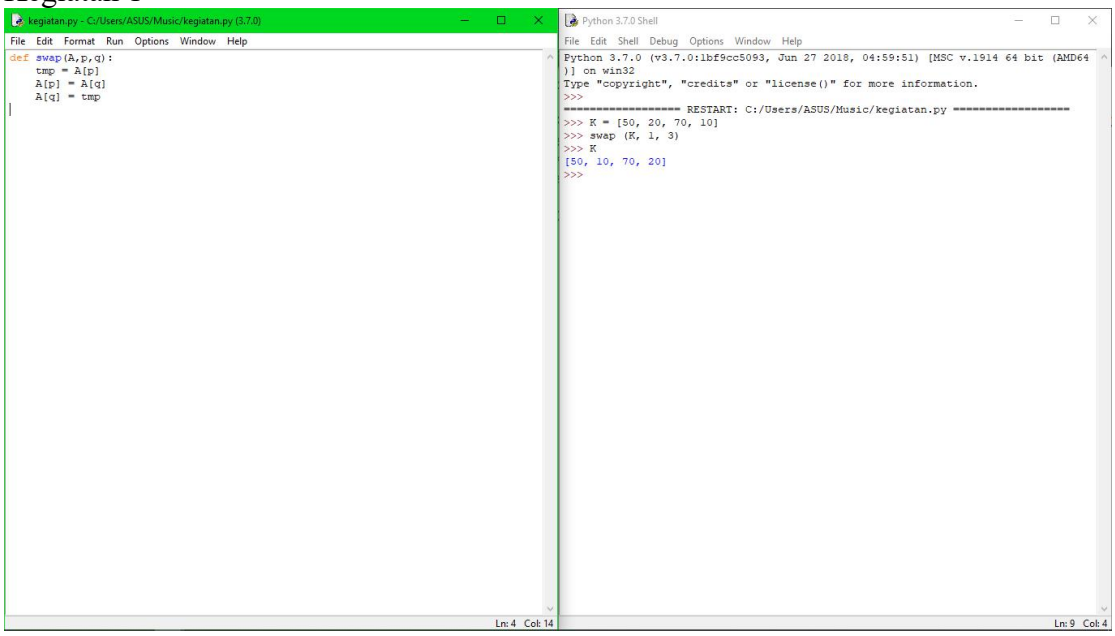
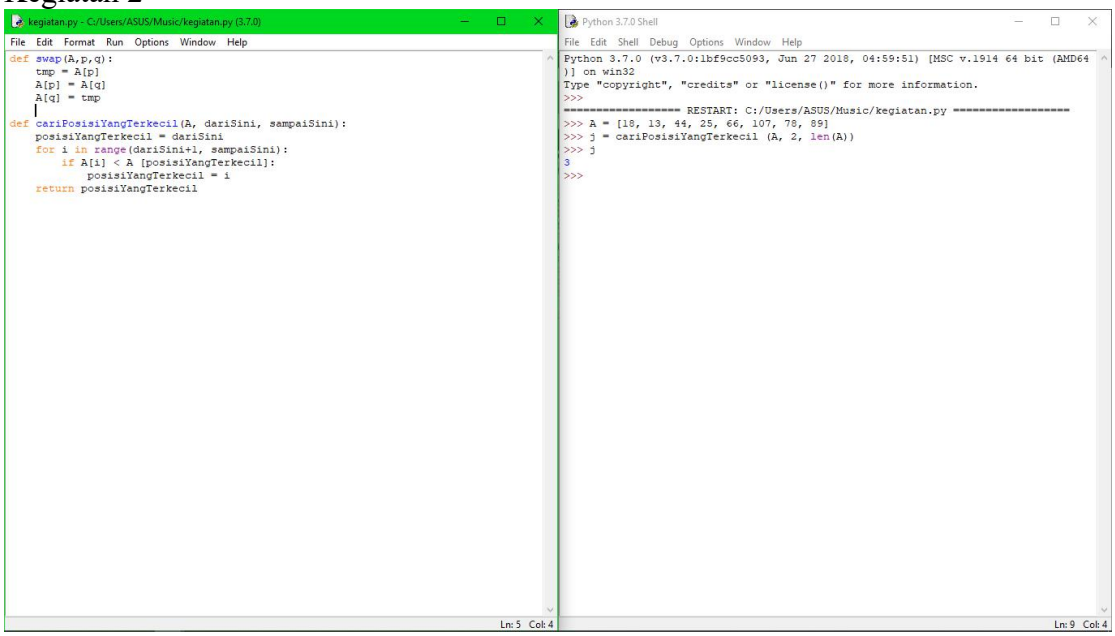
Ilyas Raihan Nadhif
L200180119
E

Modul 5

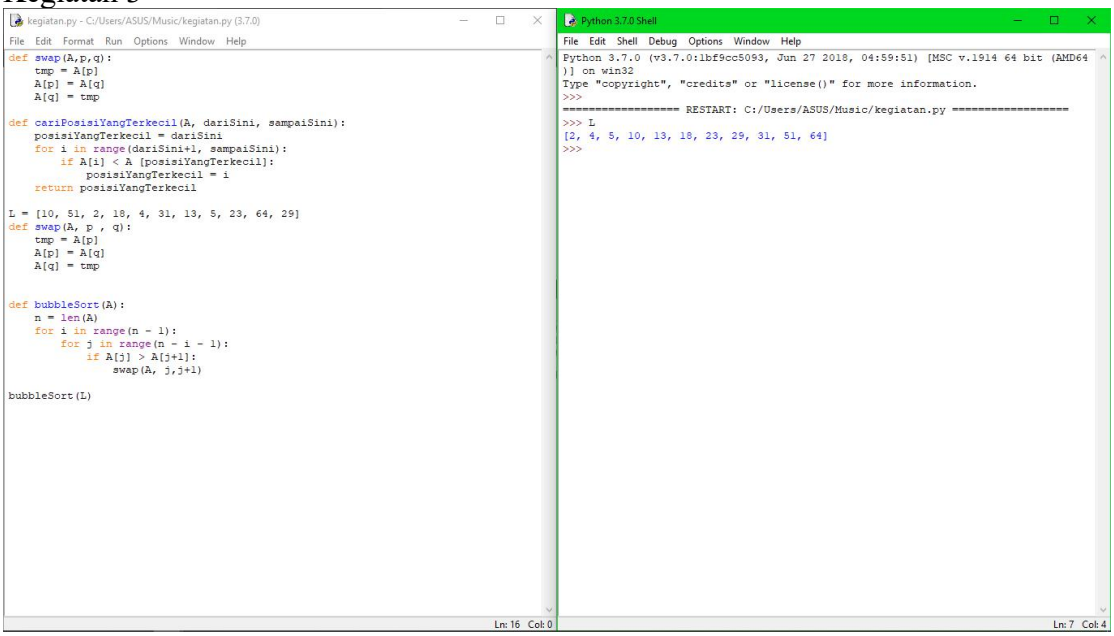
Kegiatan 1



Kegiatan 2



Kegiatan 3



kegiatan.py - C:/Users/ASUS/Music/kegiatan.py (3.7.0)

File Edit Format Run Options Window Help

```
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

L = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
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)

bubbleSort(L)
```

Ln: 16 Col: 0

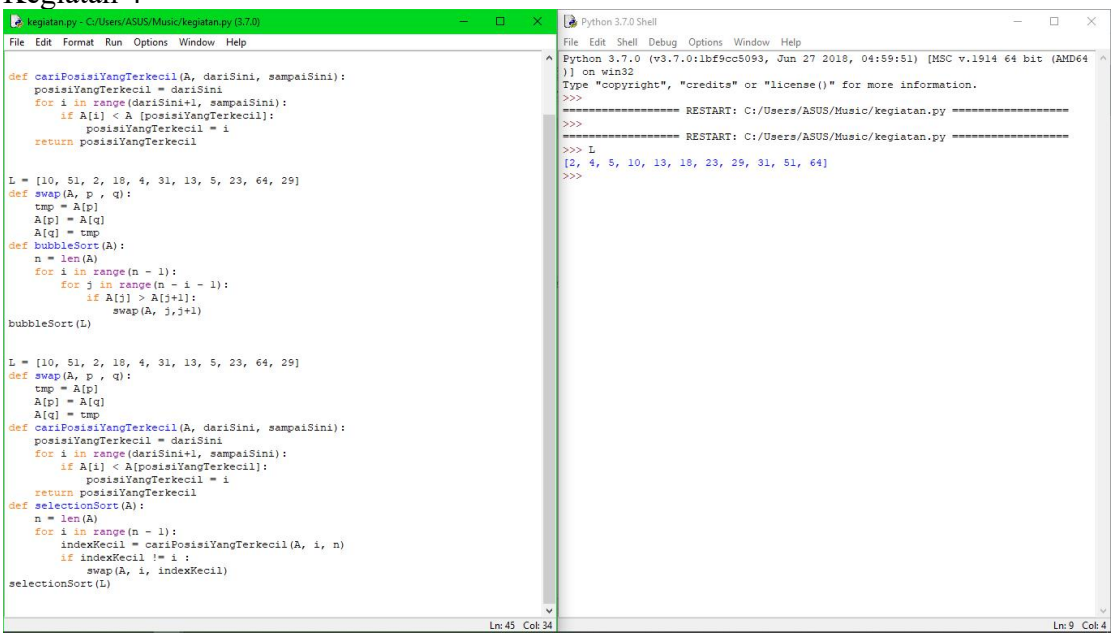
Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/kegiatan.py ==========
>>> L
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

Ln: 7 Col: 4

Kegiatan 4



kegiatan.py - C:/Users/ASUS/Music/kegiatan.py (3.7.0)

File Edit Format Run Options Window Help

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


L = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
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)
bubbleSort(L)


L = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
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
def selectionSort(A):
    n = len(A)
    for i in range(n - 1):
        indexKecil = cariPosisiYangTerkecil(A, i, n)
        if indexKecil != i :
            swap(A, i, indexKecil)
selectionSort(L)
```

Ln: 45 Col: 34

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/kegiatan.py ==========
>>>
========== RESTART: C:/Users/ASUS/Music/kegiatan.py ==========
>>> L
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

Ln: 9 Col: 4

Kegiatan 5

kegiatan.py - C:/Users/ASUS/Music/kegiatan.py (3.7.0)

File Edit Format Run Options Window Help

```
    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)
bubbleSort(L)


L = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
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
def selectionSort(A):
    n = len(A)
    for i in range(n - 1):
        indexKecil = cariPosisiYangTerkecil(A, i, n)
        if indexKecil != i :
            swap(A, i, indexKecil)
selectionSort(L)


L = [10, 51, 2, 18, 4, 31, 13, 5, 23, 64, 29]
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
insertionSort(L)
```

Ln: 58 Col: 22

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/ASUS/Music/kegiatan.py ==========
>>>
>>> L
[2, 4, 5, 10, 13, 18, 23, 29, 31, 51, 64]
>>>
```

Ln: 8 Col: 4

Tugas 1

Tugas1.py - C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas1.py (3.7.0)

```
File  Edit  Format  Run  Options  Window  Help
class MhsTIF(object):
    listKuliah = []
    def __init__(self, nama, NIM, kota, us):
        self.nama = nama
        self.NIM = NIM
        self.kotaTinggal = kota
        self.uangSaku = us

c0 = MhsTIF('Maulana',111,'Sukoharjo', 240000)
c1 = MhsTIF('Aziz',141,'Klaten', 230000)
c2 = MhsTIF('Banu',161,'Sukoharjo', 250000)
c3 = MhsTIF('Iqbal',173,'Surakarta', 235000)
c4 = MhsTIF('Riza',105,'Klaten', 240000)
c5 = MhsTIF('Rama',119,'Purwokerto', 250000)
c6 = MhsTIF('Aziz',133,'Sukoharjo', 245000)
c7 = MhsTIF('Eko',159,'Kartasura', 245000)
c8 = MhsTIF('Edi',123,'Boyolali', 245000)
c9 = MhsTIF('Faisal',164,'Sragen', 270000)
c10 = MhsTIF('Hafid',129,'Wonogiri', 265000)

Daftar = [c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10]

#Nomor 1
def swap(A, p, q):
    tmp = A[p]
    A[p] = A[q]
    A[q] = tmp

def sortNIM(daftar):
    n = len(daftar)
    for i in range(n-1):
        for j in range(n-i-1):
            if daftar[j].NIM > daftar[j+1].NIM:
                swap(daftar, j, j+1)

def checkNIM(a):
    n = len(a)
    for i in a :
        print('NIM : {} Nama : {} Kota Tinggal : {}'.format(i.NIM, i.nama, i.kotaTinggal))
```

Ln: 15 Col: 43

Python 3.7.0 Shell

```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64
bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas1.
py ====
>>> sortNIM(Daftar)
>>> checkNIM(Daftar)
NIM : 105 Nama : Riza Kota Tinggal : Klaten
NIM : 111 Nama : Maulana Kota Tinggal : Sukoharjo
NIM : 119 Nama : Rama Kota Tinggal : Purwokerto
NIM : 123 Nama : Edi Kota Tinggal : Boyolali
NIM : 129 Nama : Hafid Kota Tinggal : Wonogiri
NIM : 133 Nama : Aziz Kota Tinggal : Sukoharjo
NIM : 141 Nama : Aziz Kota Tinggal : Klaten
NIM : 159 Nama : Eko Kota Tinggal : Kartasura
NIM : 161 Nama : Banu Kota Tinggal : Sukoharjo
NIM : 164 Nama : Faisal Kota Tinggal : Sragen
NIM : 173 Nama : Iqbal Kota Tinggal : Surakarta
>>>
```

Ln: 18 Col: 4

Tugas 2

Tugas2.py - C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas2.py (3.7.0)

```
File  Edit  Format  Run  Options  Window  Help
A = [2,98,54,12,200,194]
B = [1,8,44,70,81,62,116]

def sortToC(a, b):
    c = a+b
    for i in range(1, len(c)):
        nilai = c[i]
        pos = i
        while pos > 0 and nilai < c[pos - 1]:
            c[pos] = c[pos-1]
            pos -=1
        c[pos] = nilai
    return c
```

Ln: 8 Col: 15

Python 3.7.0 Shell

```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas2.py ====
>>> C = sortToC(A, B)
>>> C
[1, 2, 8, 12, 44, 54, 62, 70, 81, 98, 116, 194, 200]
>>>
```

Ln: 8 Col: 4

Tugas 3

Tugas3.py - C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas3.py (3.7.0)

File Edit Format Run Options Window Help

```
    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

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

k = [i for i in range(1, 6001)]
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))
```

Ln: 30 Col: 0

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64
)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\ASUS\Desktop\L200180116_Algostruk_Modul5\Tugas3.py ====
bubble: 8.84985 detik
selection: 2.3907 detik
insertion: 4.05447 detik
>>>
```

Ln: 8 Col: 4