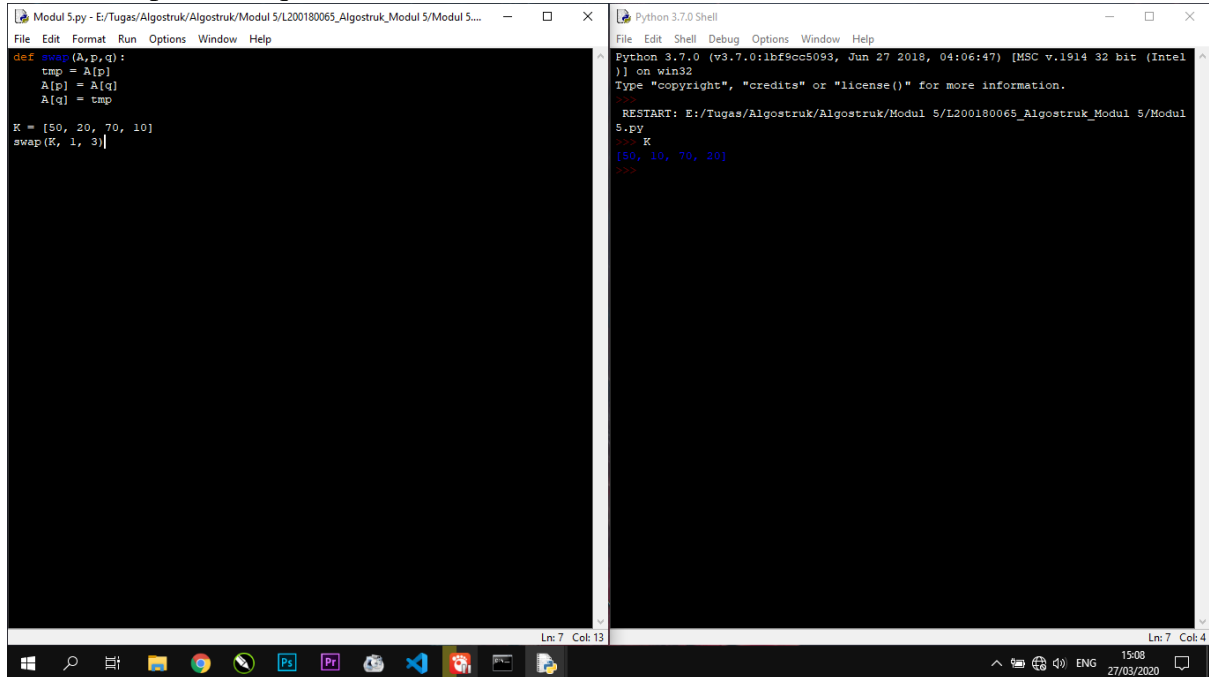


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Kelas : C

## MODUL 5

### Routine A[p] dan A[q]



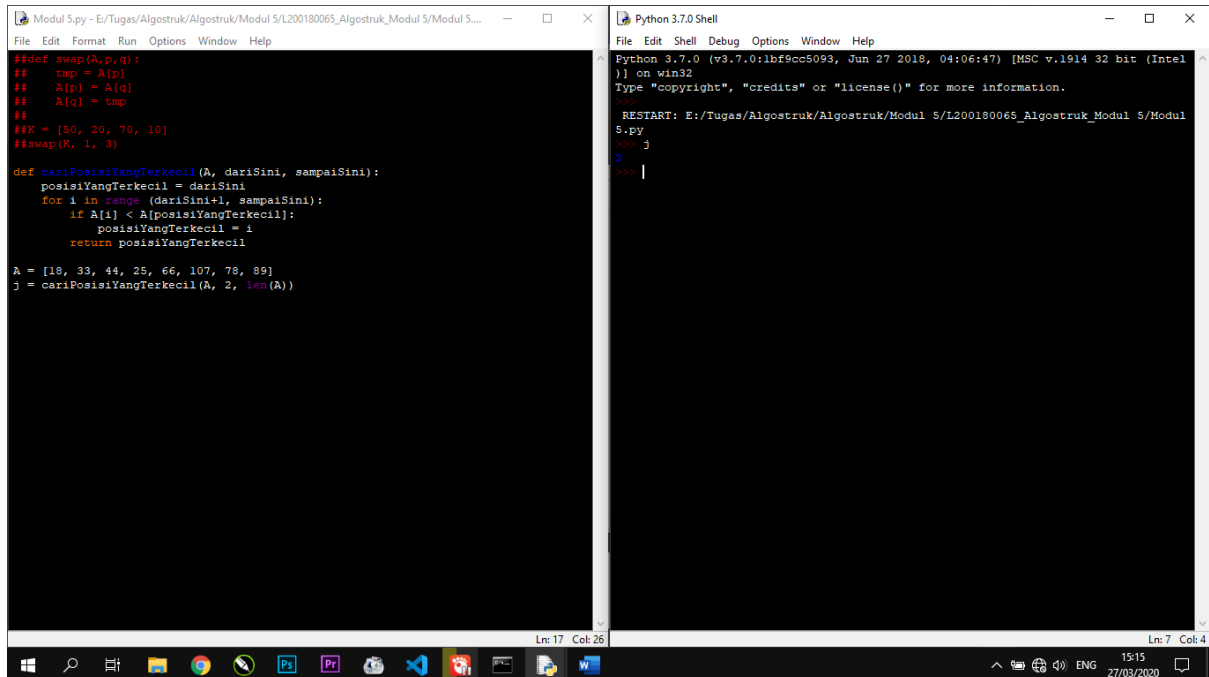
The screenshot shows a Python IDE with two windows. The left window, titled 'Modul 5.py', contains the following code:

```
def swap(A,p,q):  
    tmp = A[p]  
    A[p] = A[q]  
    A[q] = tmp  
  
K = [50, 20, 70, 10]  
swap(K, 1, 3)
```

The right window, titled 'Python 3.7.0 Shell', shows the output of the program:

```
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: E:/Tugas/Algostruk/Algostruk/Modul 5/L200180065_Algostruk_Modul 5/Modul  
5.py  
>>> K  
[50, 10, 70, 20]  
>>>
```

### Routine untuk mencari elemen terkecil



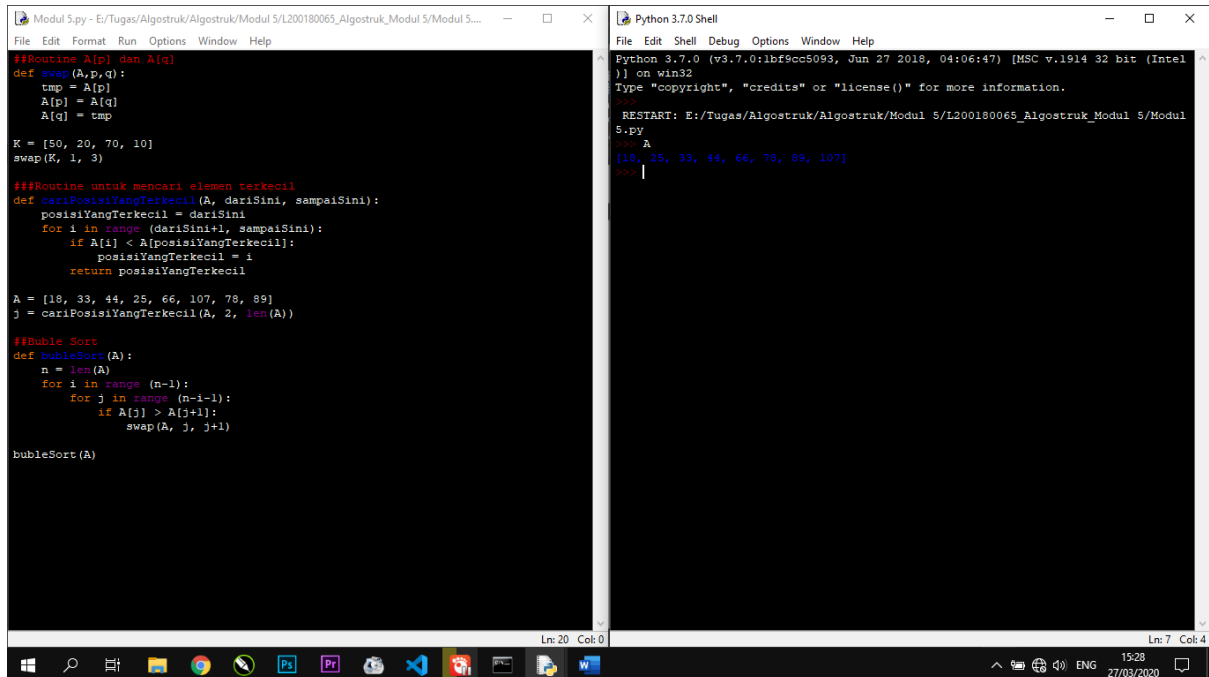
The screenshot shows a Python IDE with two windows. The left window, titled 'Modul 5.py', contains the following code:

```
def cariPosisiYangTerkecil(A, dariSini, sampaiSini):  
    posisiYangTerkecil = dariSini  
    for i in range(dariSini+1, sampaiSini):  
        if A[i] < A[posisiYangTerkecil]:  
            posisiYangTerkecil = i  
    return posisiYangTerkecil  
  
A = [10, 33, 44, 25, 66, 107, 78, 89]  
j = cariPosisiYangTerkecil(A, 2, len(A))
```

The right window, titled 'Python 3.7.0 Shell', shows the output of the program:

```
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: E:/Tugas/Algostruk/Algostruk/Modul 5/L200180065_Algostruk_Modul 5/Modul  
5.py  
>>> j  
3  
>>>
```

## Buble Sort



The screenshot shows a Python IDE with two windows. The left window, titled 'Modul 5.py', contains the following code:

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

K = [50, 20, 70, 10]
swap(K, 1, 3)

###Routine untuk mencari elemen terkecil
def cariPosisiYangTerkecil(A, dariSini, sampaiSini):
    posisiYangTerkecil = dariSini
    for i in range (dariSini+1, sampaiSini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

A = [18, 33, 44, 25, 66, 107, 78, 89]
j = cariPosisiYangTerkecil(A, 2, len(A))

##Buble Sort
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)

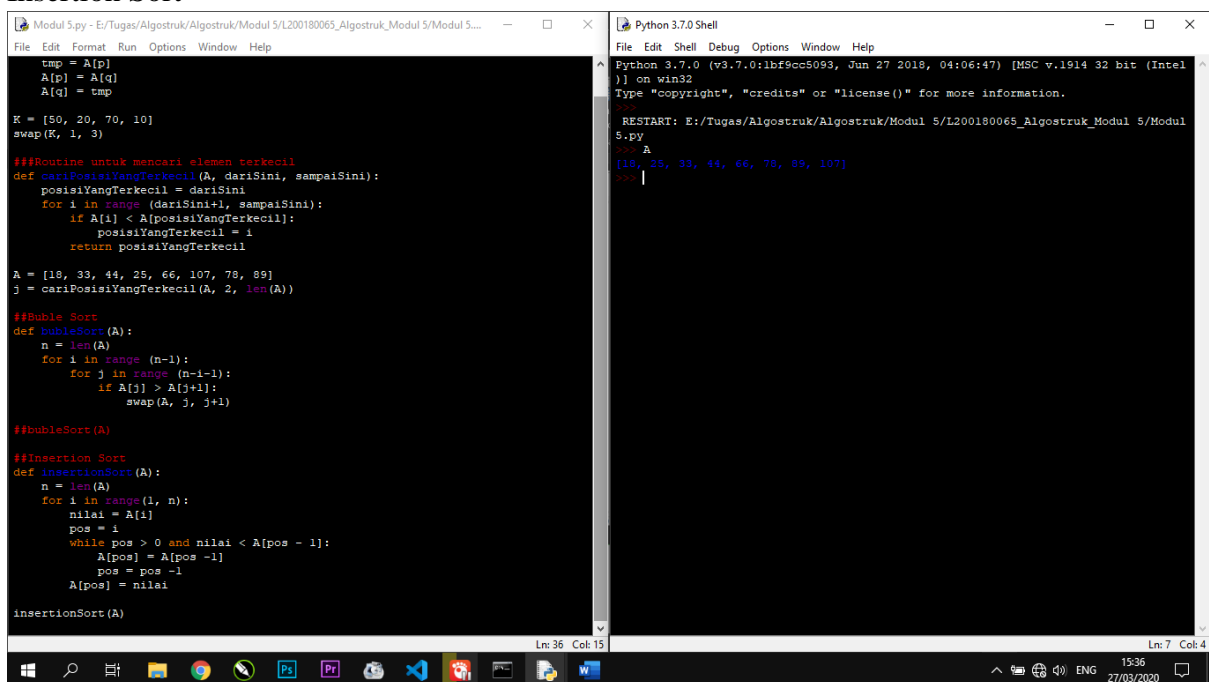
bubbleSort(A)
```

The right window, titled 'Python 3.7.0 Shell', shows the execution output:

```
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: E:/Tugas/Algostruk/Algostruk/Modul 5/L200180065_Algostruk_Modul 5/Modul
5.py
>>> A
[18, 25, 33, 44, 66, 78, 89, 107]
>>>
```

The taskbar at the bottom shows the system clock as 15:28 on 27/03/2020.

## Insertion Sort



The screenshot shows a Python IDE with two windows. The left window, titled 'Modul 5.py', contains the following code:

```
tmp = A[p]
A[p] = A[q]
A[q] = tmp

K = [50, 20, 70, 10]
swap(K, 1, 3)

###Routine untuk mencari elemen terkecil
def cariPosisiYangTerkecil(A, dariSini, sampaiSini):
    posisiYangTerkecil = dariSini
    for i in range (dariSini+1, sampaiSini):
        if A[i] < A[posisiYangTerkecil]:
            posisiYangTerkecil = i
    return posisiYangTerkecil

A = [18, 33, 44, 25, 66, 107, 78, 89]
j = cariPosisiYangTerkecil(A, 2, len(A))

##Buble Sort
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)

##BubleSort(A)

##Insertion Sort
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(A)
```

The right window, titled 'Python 3.7.0 Shell', shows the execution output:

```
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: E:/Tugas/Algostruk/Algostruk/Modul 5/L200180065_Algostruk_Modul 5/Modul
5.py
>>> A
[18, 25, 33, 44, 66, 78, 89, 107]
>>>
```

The taskbar at the bottom shows the system clock as 15:36 on 27/03/2020.