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MODUL 6

Kegiatan 6.1

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
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/Modul6.py =====
[2, 4, 6, 8, 15, 15, 20, 23, 37]
>>>

Modul6.py - E:/Tugas/Algostruk/Modul6.py (3.7.0)
File Edit Format Run Options Window Help
P = [2, 8, 15, 23, 37]
Q = [4, 6, 15, 20]

## Kegiatan 6.1
def gabungkanDuaListUrut(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 j < lb:
        C.append(B[j])
        j += 1

    return C

print(gabungkanDuaListUrut(P, Q))
```

Kegiatan 6.2

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
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/Modul6.py =====
Membelah [54, 26, 93, 17, 77, 31, 44, 55, 20]
Membelah [54, 26, 93, 17]
Membelah [54, 26]
Membelah [54]
Menggabungkan [54]
Membelah [26]
Menggabungkan [26]
Menggabungkan [26, 54]
Membelah [93, 17]
Membelah [93]
Menggabungkan [93]
Membelah [17]
Menggabungkan [17]
Menggabungkan [17, 93]
Menggabungkan [17, 26, 54, 93]
Membelah [77, 31, 44, 55, 20]
Membelah [77, 31]
Membelah [77]
Menggabungkan [77]
Membelah [31]
Menggabungkan [31]
Menggabungkan [31, 77]
Membelah [44, 55, 20]
Membelah [44]
Menggabungkan [44]
Membelah [55, 20]
Membelah [55]
Menggabungkan [55]
Membelah [20]
Menggabungkan [20]
Menggabungkan [20, 55]
Menggabungkan [20, 44, 55]
Menggabungkan [20, 31, 44, 55, 77]
Menggabungkan [17, 20, 26, 31, 44, 54, 55, 77, 93]
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>

Modul6.py - E:/Tugas/Algostruk/Modul6.py (3.7.0)
File Edit Format Run Options Window Help
return C
#print(gabungkanDuaListUrut(P, Q))

## Kegiatan 6.2
def mergeSort(A):
    print("Membelah ", A)
    if len(A) > 1:
        mid = len(A) // 2
        separuhKiri = A[:mid]
        separuhKanan = A[mid:]

        mergeSort(separuhKiri)
        mergeSort(separuhKanan)

        i=0; j=0; k=0
        while i < len(separuhKiri) and j < len(separuhKanan):
            if separuhKiri[i] < separuhKanan[j]:
                A[k] = separuhKiri[i]
                i = i + 1
            else:
                A[k] = separuhKanan[j]
                j = j + 1
            k = k + 1

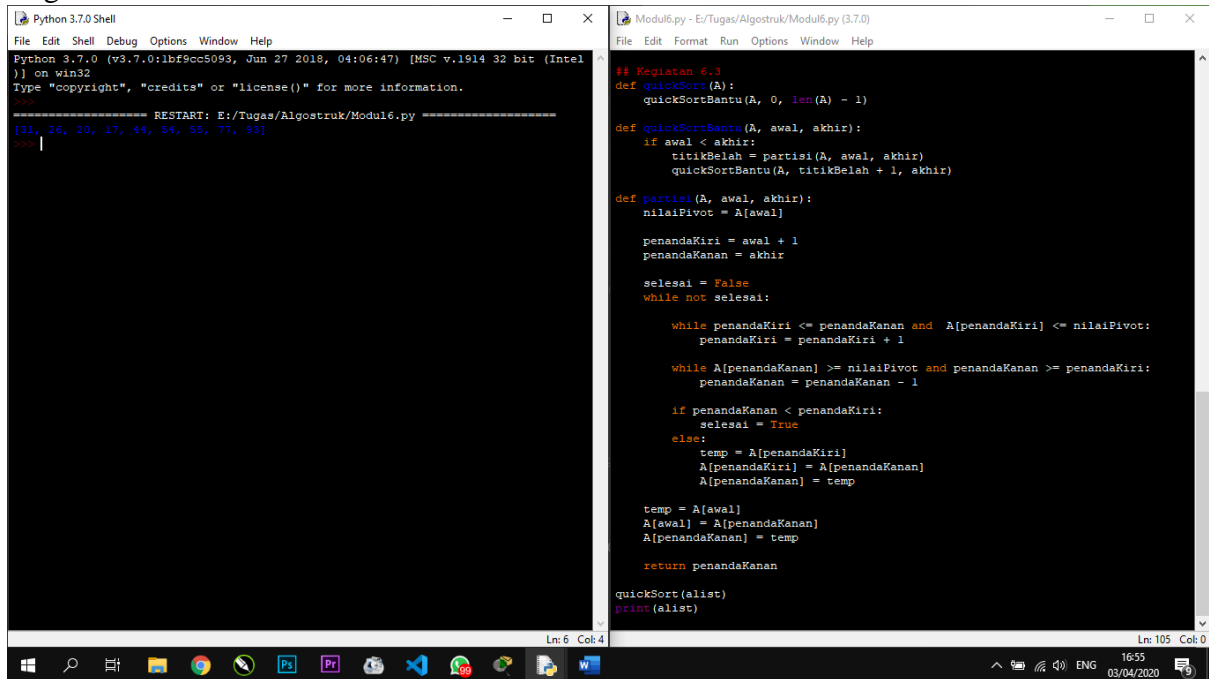
        while i < len(separuhKiri):
            A[k] = separuhKiri[i]
            i = i + 1
            k = k + 1

        while j < len(separuhKanan):
            A[k] = separuhKanan[j]
            j = j + 1
            k = k + 1

        print("Menggabungkan", A)

alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
mergeSort(alist)
print(alist)
```

Kegiatan 6.3



The image shows a Windows desktop with two open windows. The left window is a Python 3.7.0 Shell, and the right window is a Python script editor for 'Modul6.py'.

Python 3.7.0 Shell (Left Window):

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (tags/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/Modul6.py =====
[31, 26, 20, 17, 44, 54, 55, 77, 93]
>>>
```

Modul6.py (Right Window):

```
Modul6.py - E:/Tugas/Algostruk/Modul6.py (3.7.0)
File Edit Format Run Options Window Help

## Kegiatan 6.3
def quickSort(A):
    quickSortBantu(A, 0, len(A) - 1)

def quickSortBantu(A, awal, akhir):
    if awal < akhir:
        titikBelah = partisi(A, awal, akhir)
        quickSortBantu(A, titikBelah + 1, akhir)

def partisi(A, awal, akhir):
    nilaiPivot = A[awal]

    penandaKiri = awal + 1
    penandaKanan = akhir

    selesai = False
    while not selesai:

        while penandaKiri <= penandaKanan and A[penandaKiri] <= nilaiPivot:
            penandaKiri = penandaKiri + 1

        while A[penandaKanan] >= nilaiPivot and penandaKanan >= penandaKiri:
            penandaKanan = penandaKanan - 1

        if penandaKanan < penandaKiri:
            selesai = True
        else:
            temp = A[penandaKiri]
            A[penandaKiri] = A[penandaKanan]
            A[penandaKanan] = temp

            temp = A[awal]
            A[awal] = A[penandaKanan]
            A[penandaKanan] = temp

    return penandaKanan

quickSort(alist)
print(alist)
```

The taskbar at the bottom shows various application icons and the system clock indicating 16:55 on 03/04/2020.