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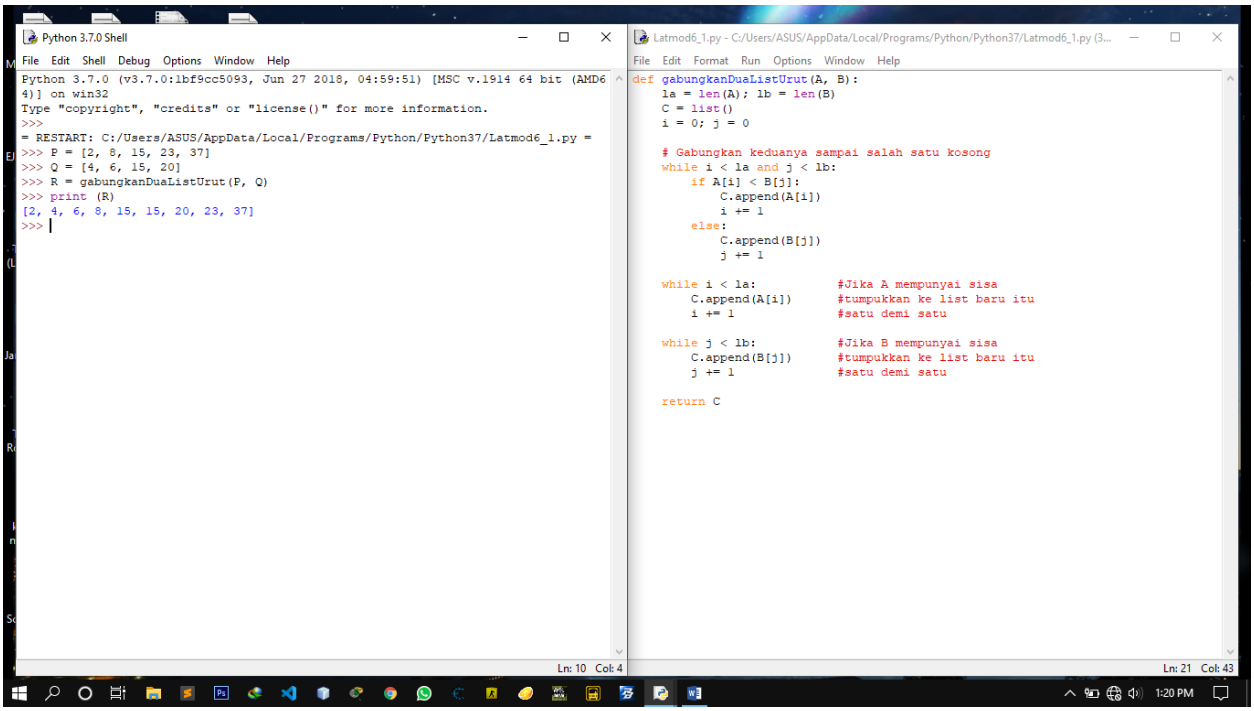
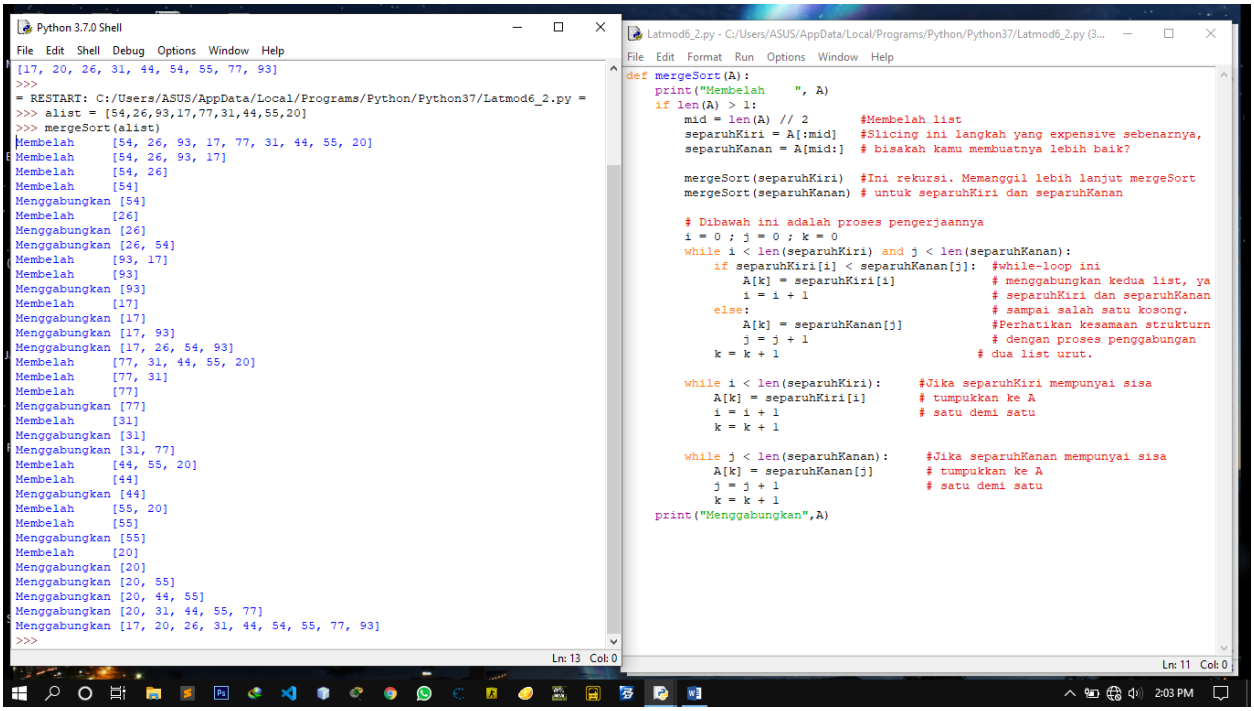
Kelas : C

Kegiatan Praktikum Modul 6

6.1



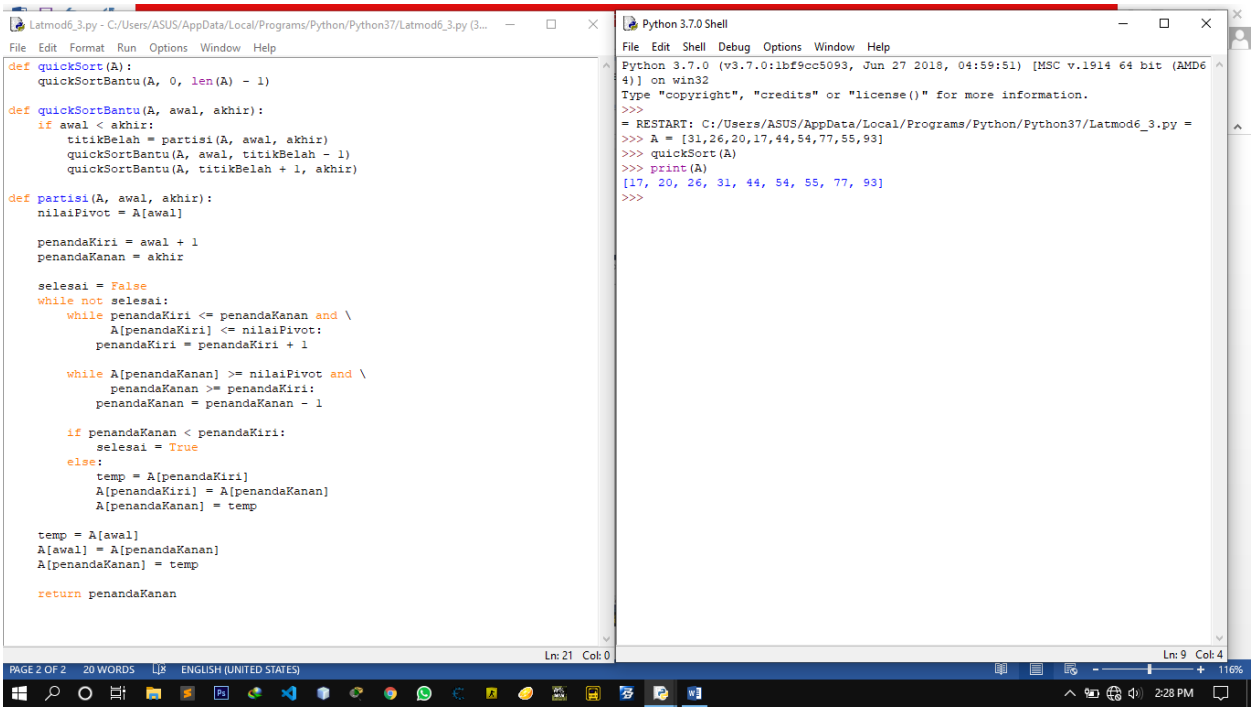
6.2 Merge Sort



```
Python 3.7.0 Shell
File  Edit  Shell  Debug  Options  Window  Help
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod6_2.py =
>>> alist = [54,26,93,17,77,31,44,55,20]
>>> mergeSort(alist)
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]
>>>
Ln: 13  Col: 0
```

```
Latmod6_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod6_2.py (3...
File  Edit  Format  Run  Options  Window  Help
def mergeSort(A):
    print("Membelah    ", A)
    if len(A) > 1:
        mid = len(A) // 2       #Membelah list
        separuhKiri = A[:mid]   #Slicing ini langkah yang expensive sebenarnya,
        separuhKanan = A[mid:]  # bisakah kamu membuatnya lebih baik?

        mergeSort(separuhKiri)  #Ini rekursi. Memanggil lebih lanjut mergeSort
        mergeSort(separuhKanan) # untuk separuhKiri dan separuhKanan

        # Dibawah ini adalah proses pengerjaannya
        i = 0 ; j = 0 ; k = 0
        while i < len(separuhKiri) and j < len(separuhKanan):
            if separuhKiri[i] < separuhKanan[j]:  #while-loop ini
                A[k] = separuhKiri[i]             # menggabungkan kedua list, ya
                i = i + 1                         # separuhKiri dan separuhKanan
            else:                                 # sampai salah satu kosong.
                A[k] = separuhKanan[j]            #Perhatikan kesamaan strukturn
                j = j + 1                         # dengan proses penggabungan
            k = k + 1                            # dua list urut.

        while i < len(separuhKiri):     #Jika separuhKiri mempunyai sisa
            A[k] = separuhKiri[i]       # tumpukkan ke A
            i = i + 1                   # satu demi satu
            k = k + 1

        while j < len(separuhKanan):     #Jika separuhKanan mempunyai sisa
            A[k] = separuhKanan[j]       # tumpukkan ke A
            j = j + 1                    # satu demi satu
            k = k + 1
    print("Menggabungkan",A)
Ln: 11  Col: 0
```

6.3 Quick Sort



```
Latmod6_3.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod6_3.py (3...
File  Edit  Format  Run  Options  Window  Help
def quickSort(A):
    quickSortBantu(A, 0, len(A) - 1)

def quickSortBantu(A, awal, akhir):
    if awal < akhir:
        titikBelah = partisi(A, awal, akhir)
        quickSortBantu(A, awal, titikBelah - 1)
        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
Ln: 21  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 (AMD6
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod6_3.py =
>>> A = [31,26,20,17,44,54,77,55,93]
>>> quickSort(A)
>>> print(A)
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>
Ln: 9  Col: 4
```

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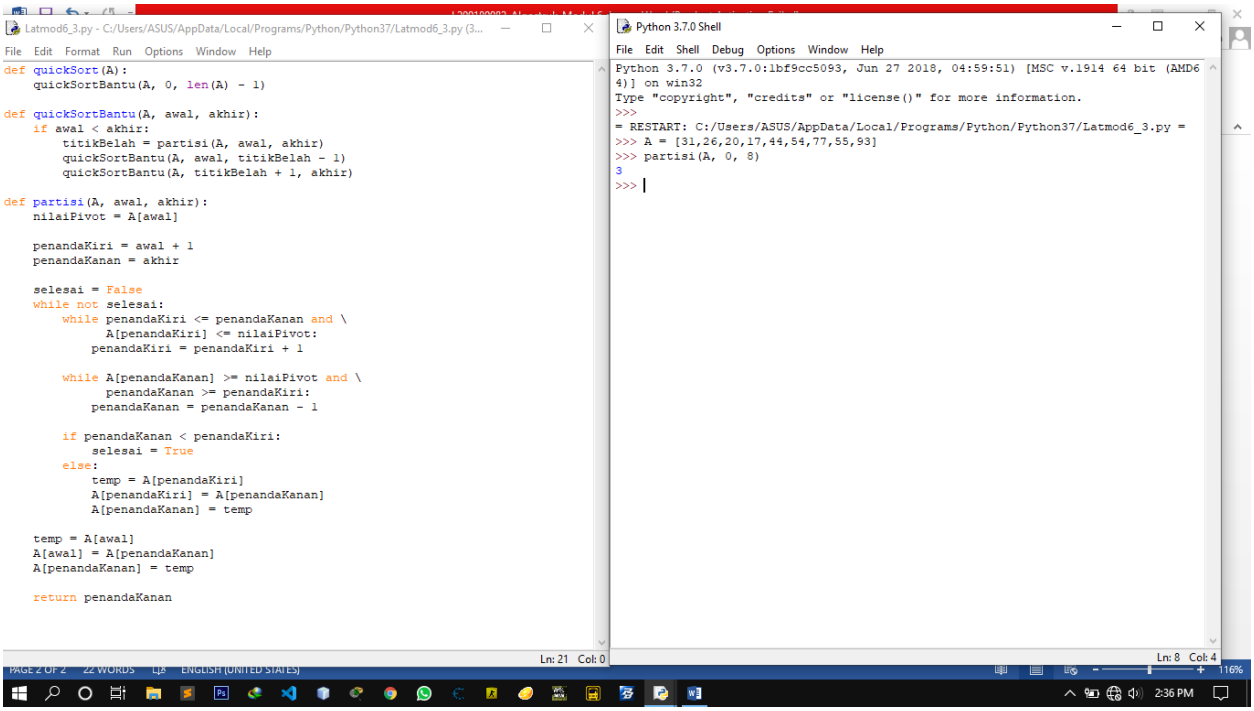
Latmod6_3.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Latmod6_3.py (3...
File Edit Format Run Options Window Help
def quickSort(A):
quickSortBantu(A, 0, len(A) - 1)
def quickSortBantu(A, awal, akhir):
if awal < akhir:
titikBelah = partisi(A, awal, akhir)
quickSortBantu(A, awal, titikBelah - 1)
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
Ln: 21 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/AppData/Local/Programs/Python/Python37/Latmod6_3.py =
>>> A = [31,26,20,17,44,54,77,55,93]
>>> partisi(A, 0, 8)
3
>>>
Ln: 8 Col: 4
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