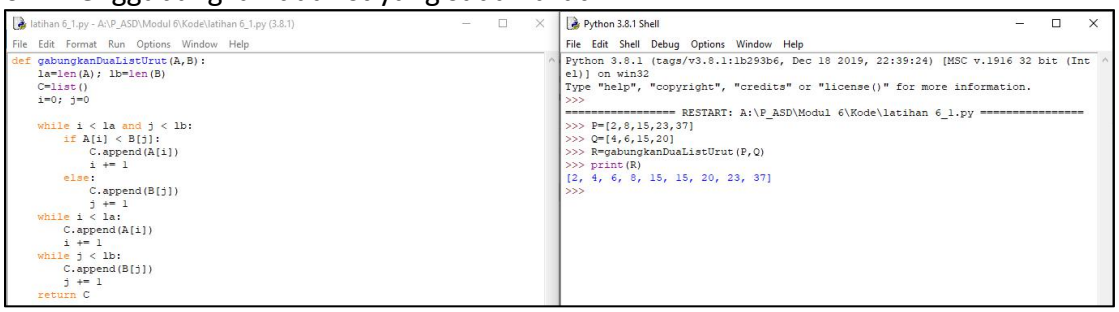
LAPORAN PRAKTIKUM
ALGORITMA DAN STRUKTUR DATA
MODUL 6. PENGURUTAN LANJUT

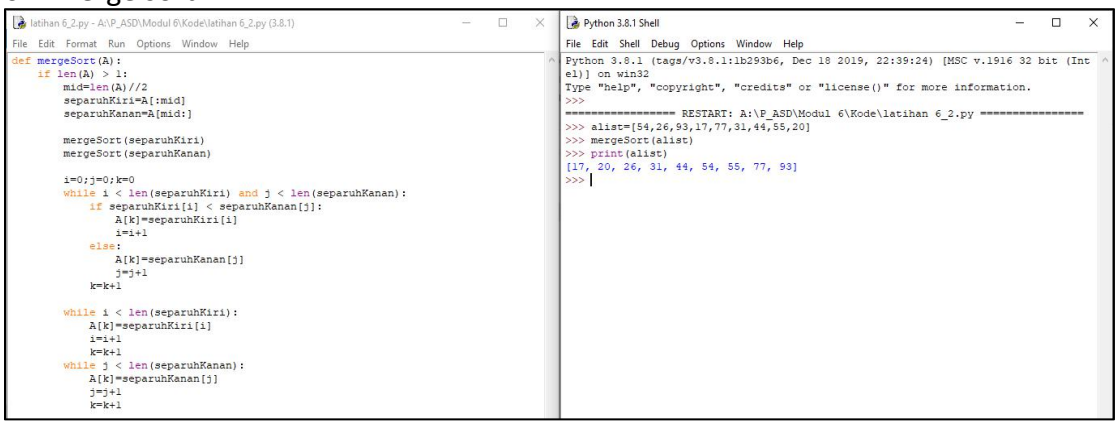
6.1 Menggabungkan dua list yang sudah urut



```
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
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: A:\P_ASD\Modul 6\Kode\latihan 6_1.py ==========
>>> P=[2,8,15,23,37]
>>> Q=[4,6,15,20]
>>> R=gabungkanDuaListUrut(P,Q)
>>> print(R)
[2, 4, 6, 8, 15, 15, 20, 23, 37]
>>>
```

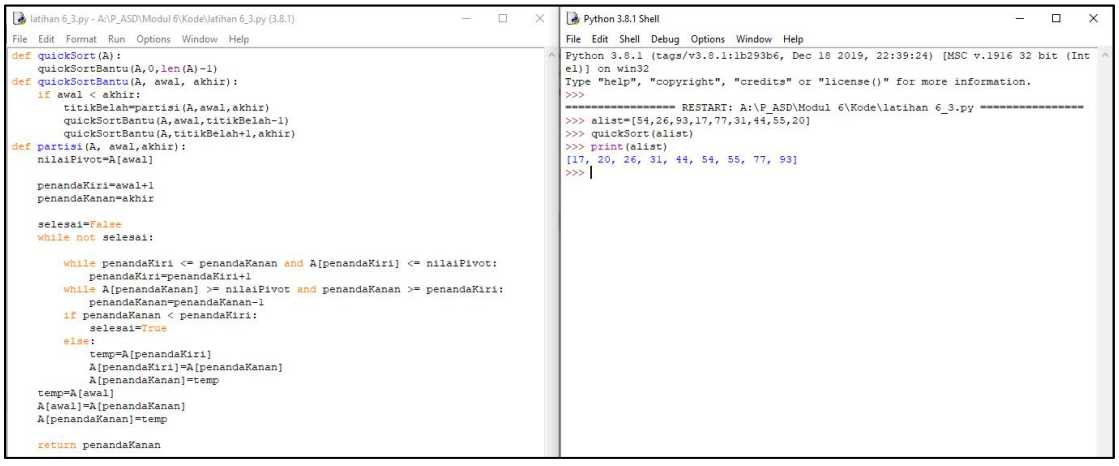
6.2 Merge sort



```
def mergeSort(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
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: A:\P_ASD\Modul 6\Kode\latihan 6_2.py ==========
>>> alist=[54,26,93,17,77,31,44,55,20]
>>> mergeSort(alist)
>>> print(alist)
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>
```

6.3 Quick sort



```
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
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: A:\P_ASD\Modul 6\Kode\latihan 6_3.py ==========
>>> alist=[54,26,93,17,77,31,44,55,20]
>>> quickSort(alist)
>>> print(alist)
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>
```