

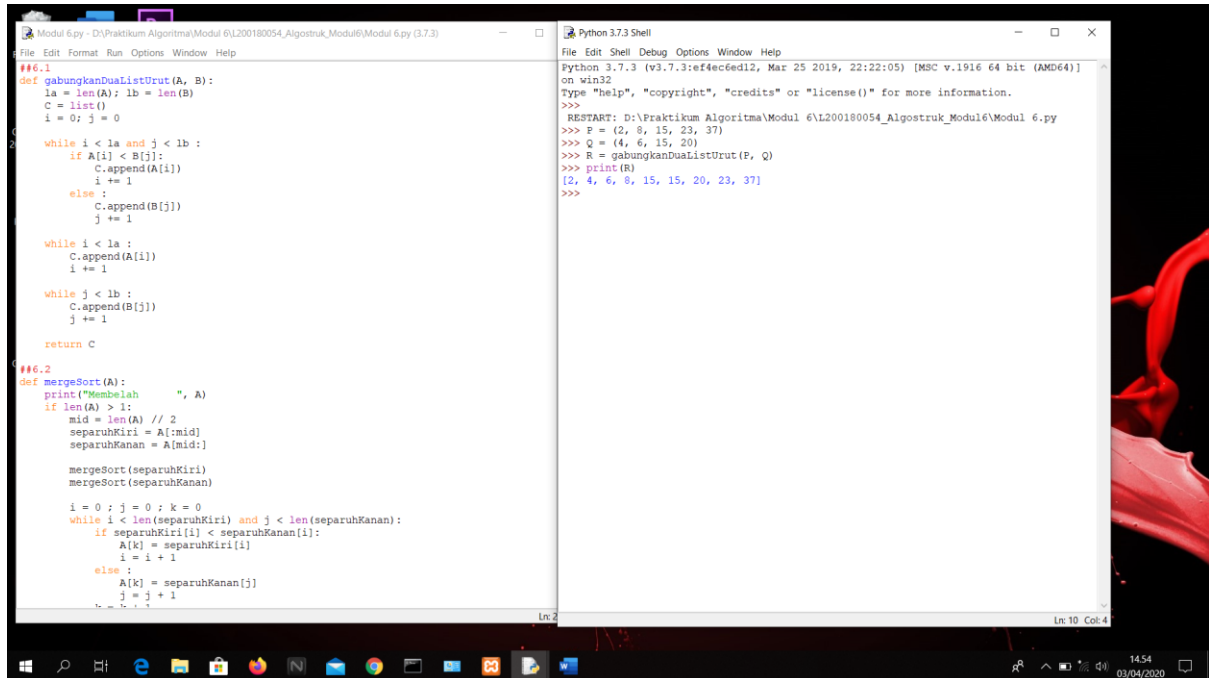
Nama : Bayu Prayitno Aji

NIM : L200180054

Kelas : C

Modul 6

6.1 Menggabungkan dua list yang sudah urut



```
Modul 6.py - D:\Praktikum Algoritma\Modul 6\L200180054_Algostruk_Modul6\Modul 6.py (3.7.3)
Python 3.7.3 Shell

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

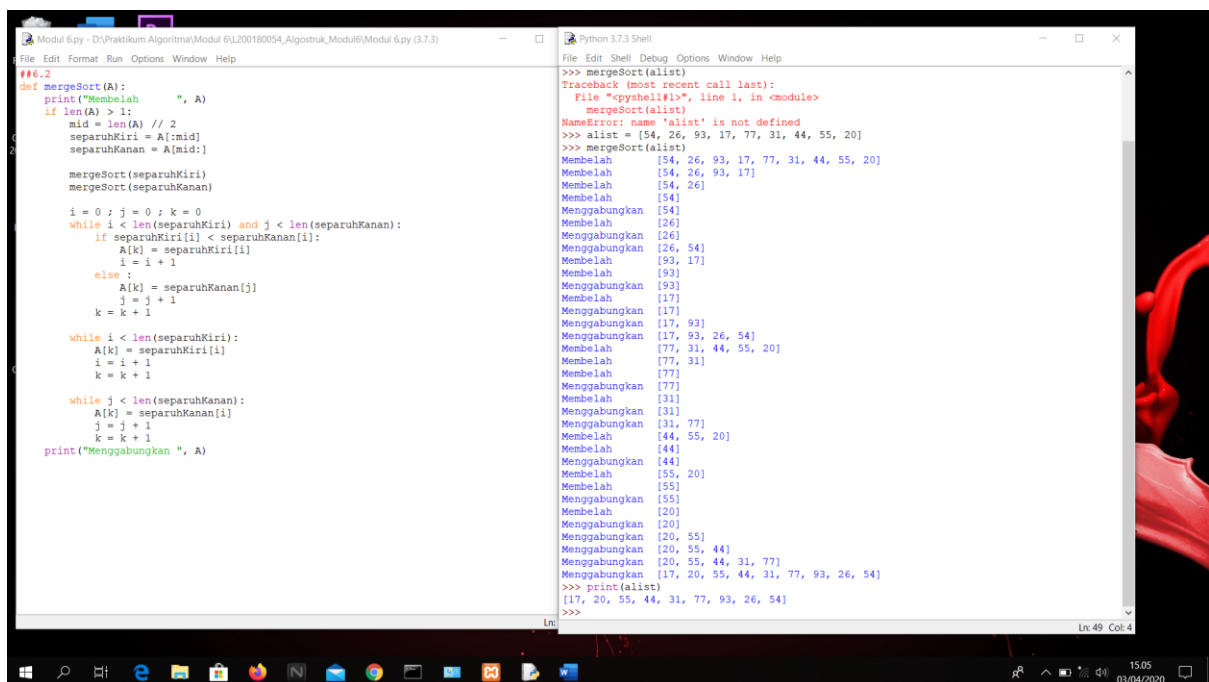
##6.2
def mergeSort(A):
    print("Membelah", A)
    if len(A) > 1:
        mid = len(A) // 2
        separuhKiri = A[:mid]
        separuhKanan = A[mid:]

        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)

Python 3.7.3 Shell
Python 3.7.3 (v3.7.3:ef4ec6d12, Mar 25 2019, 22:22:05) [MSC v.1916 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
RESTART: D:\Praktikum Algoritma\Modul 6\L200180054_Algostruk_Modul6\Modul 6.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



```
Modul 6.py - D:\Praktikum Algoritma\Modul 6\L200180054_Algostruk_Modul6\Modul 6.py (3.7.3)
Python 3.7.3 Shell

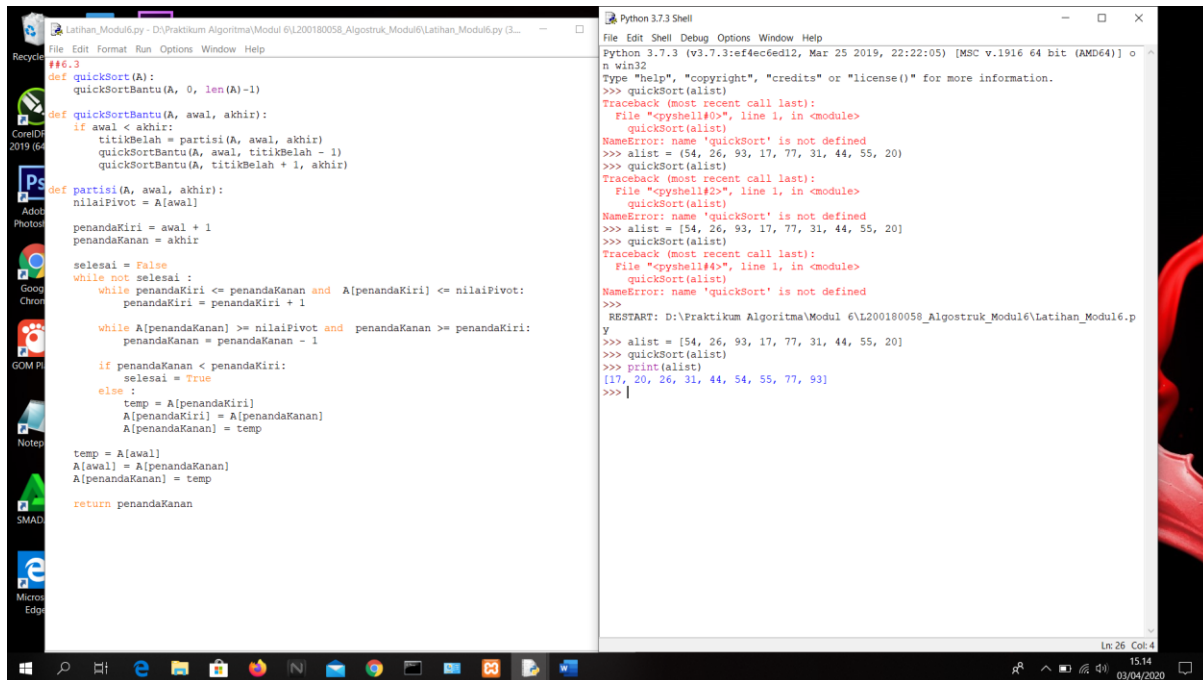
def mergeSort(A):
    print("Membelah", A)
    if len(A) > 1:
        mid = len(A) // 2
        separuhKiri = A[:mid]
        separuhKanan = A[mid:]

        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)

Python 3.7.3 Shell
>>> mergeSort(alist)
Traceback (most recent call last):
  File "c:\python37\python.exe", line 1, in <module>
    mergeSort(alist)
NameError: name 'alist' is not defined
>>> 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]
Menggabungkan [93]
Menggabungkan [93]
Membelah [17]
Menggabungkan [17]
Menggabungkan [17, 93]
Menggabungkan [17, 93, 26, 54]
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]
Menggabungkan [55]
Menggabungkan [55]
Menggabungkan [20]
Menggabungkan [20]
Menggabungkan [20, 55]
Menggabungkan [20, 55, 44]
Menggabungkan [20, 55, 44, 31, 77]
Menggabungkan [17, 20, 55, 44, 31, 77, 93, 26, 54]
>>> print(alist)
[17, 20, 55, 44, 31, 77, 93, 26, 54]
>>>
```

6.3 Quick Sort



The image shows a screenshot of a Windows desktop with a Python IDE (likely PyCharm) and a Python 3.7.3 Shell. The IDE window displays a Python script for a Quick Sort algorithm. The script defines a `quickSortBantu` function, a `partisi` function, and a `quickSort` function. The `quickSort` function is called with a list `alist`. The shell window shows the execution of the script, which results in a `NameError: name 'quickSort' is not defined` error. The error message is repeated multiple times, indicating that the function is not being recognized. The shell also shows the list `alist` being sorted and printed.

```
#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, 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

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

```
Python 3.7.3 Shell
File Edit Shell Debug Options Window Help
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 22:22:05) [MSC v.1916 64 bit (AMD64)] o
n win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> quickSort(alist)
Traceback (most recent call last):
  File "<pyshell#0>", line 1, in <module>
    quickSort(alist)
NameError: name 'quickSort' is not defined
>>> alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
>>> quickSort(alist)
Traceback (most recent call last):
  File "<pyshell#2>", line 1, in <module>
    quickSort(alist)
NameError: name 'quickSort' is not defined
>>> alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
>>> quickSort(alist)
Traceback (most recent call last):
  File "<pyshell#4>", line 1, in <module>
    quickSort(alist)
NameError: name 'quickSort' is not defined
>>>
RESTART: D:\Praktikum Algoritma\Modul 6\L200180058_Algostruk_Modul6\Latihan_Modul6.p
y
>>> alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
>>> quickSort(alist)
>>> print(alist)
[17, 20, 26, 31, 44, 54, 55, 77, 93]
>>>
```