

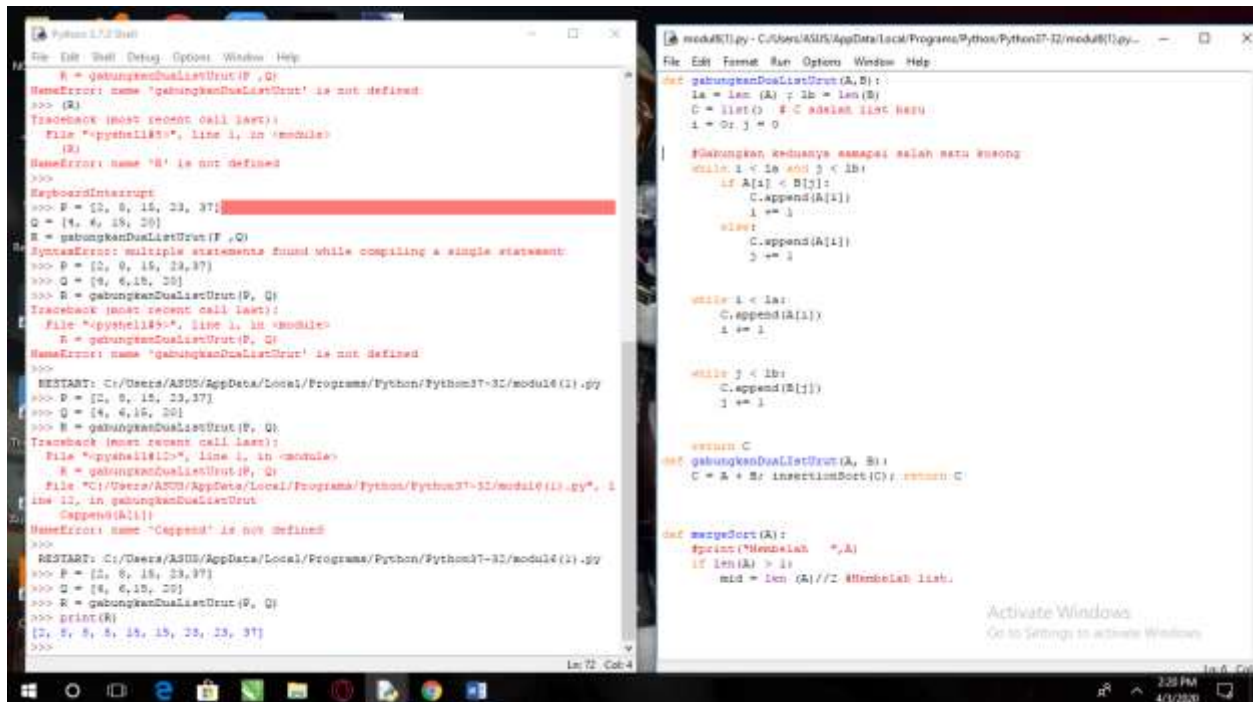
Nama : Defa Raffy Zanuar R

NIM : L200180068

Kelas : C

Modul 6

Praktikum



The image shows two windows from a Windows 10 desktop. The left window is a Python 3.7.2 Shell with the following code and output:

```
File Edit Shell Debug Options Window Help
R = gabunganDualListUrut(P, Q)
NameError: name 'gabunganDualListUrut' is not defined
>>> (R)
Traceback (most recent call last):
  File "<ipython185>", line 1, in <module>
    (R)
NameError: name 'R' is not defined
>>>
KeyboardInterrupt
>>> P = [2, 8, 15, 23, 37]
Q = [4, 6, 19, 20]
R = gabunganDualListUrut(P, Q)
SyntaxError: multiple statements found while compiling a single statement
>>> P = [2, 8, 15, 23, 37]
>>> Q = [4, 6, 19, 20]
>>> R = gabunganDualListUrut(P, Q)
Traceback (most recent call last):
  File "<ipython185>", line 1, in <module>
    R = gabunganDualListUrut(P, Q)
NameError: name 'gabunganDualListUrut' is not defined
>>>
RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py
>>> P = [2, 8, 15, 23, 37]
>>> Q = [4, 6, 19, 20]
>>> R = gabunganDualListUrut(P, Q)
Traceback (most recent call last):
  File "<ipython185>", line 1, in <module>
    R = gabunganDualListUrut(P, Q)
File "C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py", line 12, in gabunganDualListUrut
    C.append(A[i])
NameError: name 'C.append' is not defined
>>>
RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py
>>> P = [2, 8, 15, 23, 37]
>>> Q = [4, 6, 19, 20]
>>> R = gabunganDualListUrut(P, Q)
>>> print(R)
[2, 4, 6, 8, 15, 19, 20, 23, 37]
```

The right window is a file editor showing the code for the `gabunganDualListUrut` function:

```
def gabunganDualListUrut(A, B):
    la = len(A) ; lb = len(B)
    C = list()
    i = 0 ; j = 0

    #Gabungkan keduanya sampai salah satu habis
    while i < la and j < lb:
        if A[i] < B[j]:
            C.append(A[i])
            i += 1
        else:
            C.append(B[j])
            j += 1

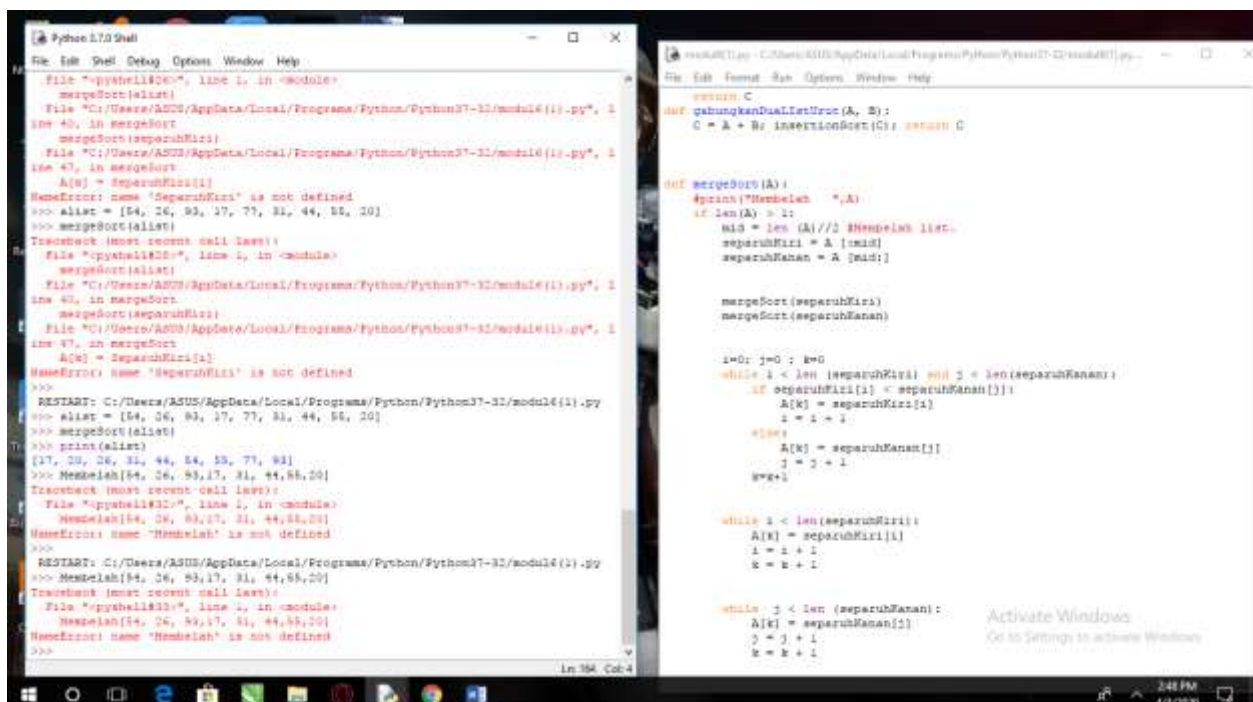
    while i < la:
        C.append(A[i])
        i += 1

    while j < lb:
        C.append(B[j])
        j += 1

    return C

def gabunganDualListUrut(A, B):
    C = A + B ; insertionSort(C) ; return C

def mergeSort(A):
    #print("Memelah ", A)
    if len(A) > 1:
        mid = len(A)//2 #Memelah list.
```



The image shows two windows from a Windows 10 desktop. The left window is a Python 3.7.2 Shell with the following code and output:

```
File Edit Shell Debug Options Window Help
File "<ipython186>", line 1, in <module>
    mergeSort(alist)
File "C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py", line 40, in mergeSort
    mergeSort(separuhKiri)
File "C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py", line 47, in mergeSort
    A[k] = separuhKiri[i]
NameError: name 'separuhKiri' is not defined
>>> alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
>>> mergeSort(alist)
Traceback (most recent call last):
  File "<ipython186>", line 1, in <module>
    mergeSort(alist)
File "C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py", line 40, in mergeSort
    mergeSort(separuhKiri)
File "C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py", line 47, in mergeSort
    A[k] = separuhKiri[i]
NameError: name 'separuhKiri' is not defined
>>>
RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py
>>> alist = [54, 26, 93, 17, 77, 31, 44, 55, 20]
>>> mergeSort(alist)
>>> print(alist)
[17, 20, 26, 31, 44, 55, 77, 93]
>>> Memelah[54, 26, 93, 17, 31, 44, 55, 20]
Traceback (most recent call last):
  File "<ipython186>", line 1, in <module>
    Memelah[54, 26, 93, 17, 31, 44, 55, 20]
NameError: name 'Memelah' is not defined
>>>
RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37-32/modul6(1).py
>>> Memelah[54, 26, 93, 17, 31, 44, 55, 20]
Traceback (most recent call last):
  File "<ipython186>", line 1, in <module>
    Memelah[54, 26, 93, 17, 31, 44, 55, 20]
NameError: name 'Memelah' is not defined
>>>
```

The right window is a file editor showing the code for the `mergeSort` function:

```
def mergeSort(A):
    #print("Memelah ", A)
    if len(A) > 1:
        mid = len(A)//2 #Memelah list.
        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 3.7.0 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\Python37-32\modul6(1).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]
>>>

module1.py - C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py
File Edit Format Run Options Window Help
mid = len(A)//2 #titikbelah list.
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)

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

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

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
>>> A = [31, 26, 20, 17, 44, 54, 77, 55, 93]
>>> quickSort(A)
Traceback (most recent call last):
  File "pyshell1844.py", line 1, in <module>:
    quickSort(A)
NameError: name 'quickSort' is not defined
>>> A = [31, 26, 20, 17, 44, 54, 77, 55, 93]
>>> quickSort(A)
Traceback (most recent call last):
  File "pyshell1844.py", line 1, in <module>:
    quickSort(A)
  File "C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py", line 69, in quickSort
    quickSortBantu(A, 0, len(A) - 1)
  File "C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py", line 75, in quickSortBantu
    quickSortBantu(A, awal, titikBelah + 1)
TypeError: unsupported operand type(s) for '+': 'NoneType' and 'int'
>>>
RESTART: C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py
>>> A = [31, 26, 20, 17, 44, 54, 77, 55, 93]
SyntaxError: unexpected indent
>>> quickSort(A)
Traceback (most recent call last):
  File "pyshell1844.py", line 1, in <module>:
    quickSort(A)
NameError: name 'A' is not defined
>>> A = [31, 26, 20, 17, 44, 54, 77, 55, 93]
>>> quickSort(A)
Traceback (most recent call last):
  File "pyshell1870.py", line 1, in <module>:
    quickSort(A)
  File "C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py", line 69, in quickSort
    quickSortBantu(A, 0, len(A) - 1)
  File "C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py", line 75, in quickSortBantu
    quickSortBantu(A, awal, titikBelah - 1)
TypeError: unsupported operand type(s) for '-': 'NoneType' and 'int'
>>>

module1.py - C:\Users\ASUS\AppData\Local\Programs\Python\Python37-32\modul6(1).py
File Edit Format Run Options Window Help
j = j + 1
k = k + 1
print("Menggabungkan",A)

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:
            penandaKanan = 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]
            temp = A[penandaKanan]
```