Modul 3

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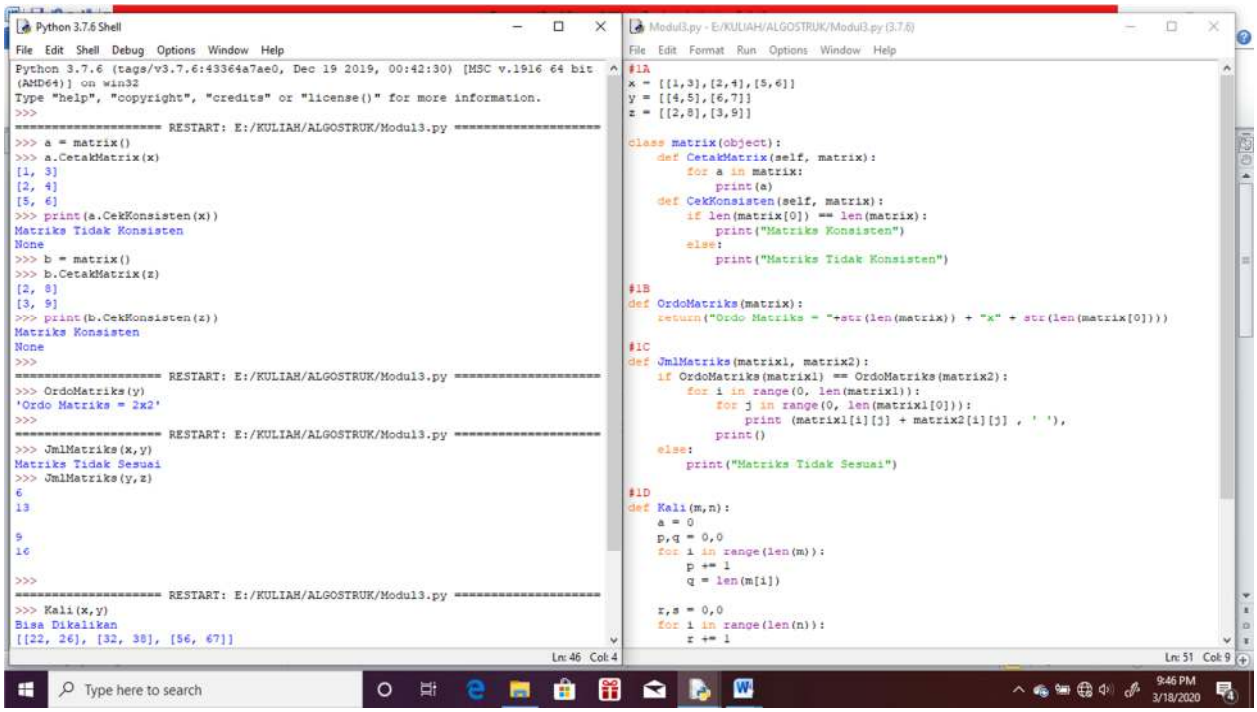
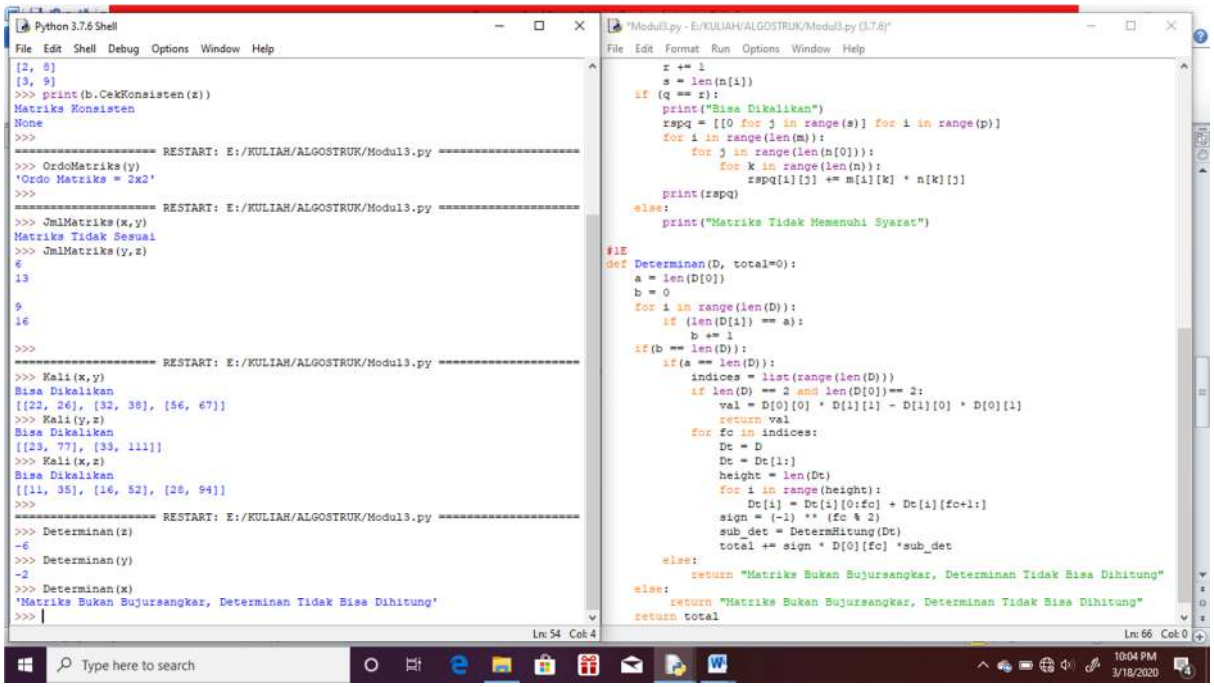
Mata Kuliah : Praktikum Algoritma & Struktur Data

Tanggal Praktikum : 12 Maret 2020

Nomor 1




Python 3.7.6 Shell
File Edit Shell Debug Options Window Help
[2, 8]
[3, 9]
>>> print(b.CekKonsisten(z))
Matriks Konsisten
None
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> OrdoMatriks(y)
'Ordo Matriks = 2x2'
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> JmlMatriks(x,y)
Matriks Tidak Sesuai
>>> JmlMatriks(y,z)
6
13
9
16
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> Kali(x,y)
Bisa Dikalikan
[[22, 26], [32, 38], [56, 67]]
>>> Kali(y,z)
Bisa Dikalikan
[[23, 77], [33, 111]]
>>> Kali(x,z)
Bisa Dikalikan
[[11, 35], [16, 52], [28, 94]]
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> Determinan(z)
-6
>>> Determinan(y)
-2
>>> Determinan(x)
'Matriks Bukan Bujursangkar, Determinan Tidak Bisa Dihitung'
>>>
Ln: 54 Col: 4
"Modul3.py - E:/KULIAH/ALGOSTRUK/Modul3.py (3.7.6)"
File Edit Format Run Options Window Help
r += 1
s = len(n[i])
if (q == r):
print("Bisa Dikalikan")
rspq = [[0 for j in range(s)] for i in range(p)]
for i in range(len(m)):
for j in range(len(n[0])):
for k in range(len(n)):
rspq[i][j] += m[i][k] * n[k][j]
print(rspq)
else:
print("Matriks Tidak Memenuhi Syarat")
#1E
def Determinan(D, total=0):
a = len(D[0])
b = 0
for i in range(len(D)):
if (len(D[i]) == a):
b += 1
if(b == len(D)):
if(a == len(D)):
indices = list(range(len(D)))
if len(D) == 2 and len(D[0])== 2:
val = D[0][0] * D[1][1] - D[1][0] * D[0][1]
return val
for fc in indices:
Dt = D
Dt = Dt[1:]
height = len(Dt)
for i in range(height):
Dt[i] = Dt[i][0:fc] + Dt[i][fc+1:]
sign = (-1) ** (fc % 2)
sub_det = DetermHitung(Dt)
total += sign * D[0][fc] *sub_det
else:
return "Matriks Bukan Bujursangkar, Determinan Tidak Bisa Dihitung"
else:
return "Matriks Bukan Bujursangkar, Determinan Tidak Bisa Dihitung"
return total
Ln: 66 Col: 0
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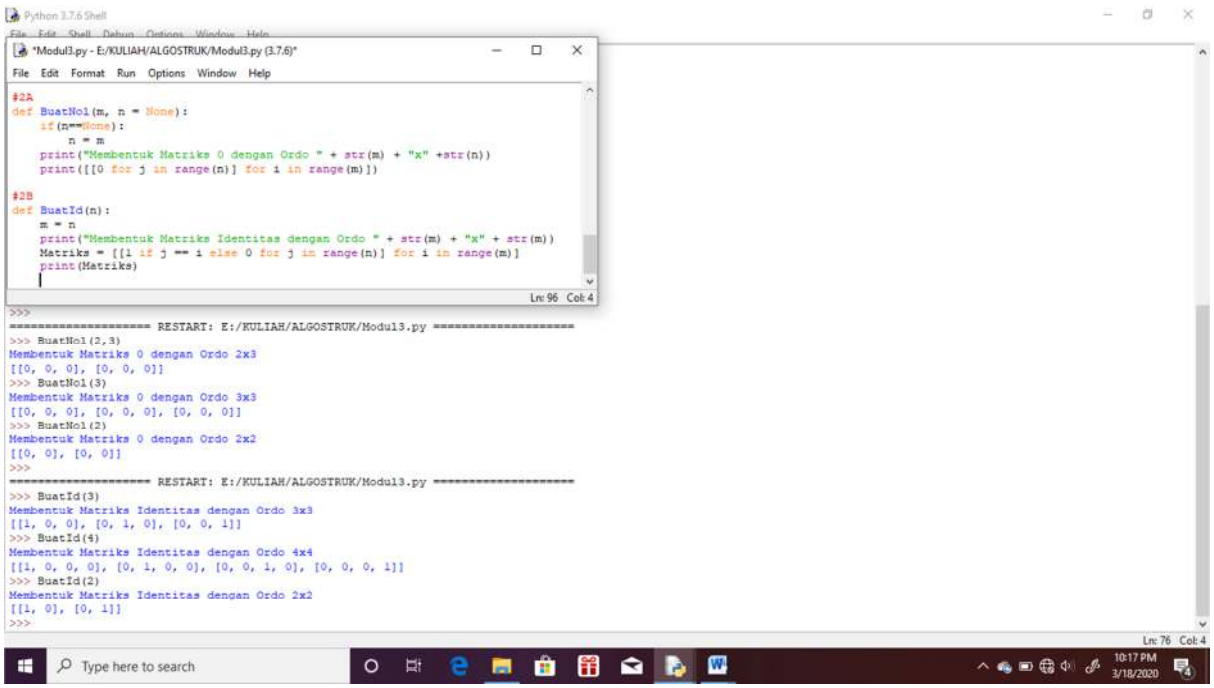
Nomor 2


Python 3.7.6 Shell
"Modul3.py - E:/KULIAH/ALGOSTRUK/Modul3.py (3.7.6)"
File Edit Format Run Options Window Help
#2A
def BuatNol(m, n = None):
if(n==None):
n = m
print("Membentuk Matriks 0 dengan Ordo " + str(m) + "x" +str(n))
print([[0 for j in range(n)] for i in range(m)])
#2B
def BuatId(n):
m = n
print("Membentuk Matriks Identitas dengan Ordo " + str(m) + "x" + str(m))
Matriks = [[1 if j == i else 0 for j in range(n)] for i in range(m)]
print(Matriks)
Ln: 96 Col: 4
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> BuatNol(2,3)
Membentuk Matriks 0 dengan Ordo 2x3
[[0, 0, 0], [0, 0, 0]]
>>> BuatNol(3)
Membentuk Matriks 0 dengan Ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>> BuatNol(2)
Membentuk Matriks 0 dengan Ordo 2x2
[[0, 0], [0, 0]]
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> BuatId(3)
Membentuk Matriks Identitas dengan Ordo 3x3
[[1, 0, 0], [0, 1, 0], [0, 0, 1]]
>>> BuatId(4)
Membentuk Matriks Identitas dengan Ordo 4x4
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
>>> BuatId(2)
Membentuk Matriks Identitas dengan Ordo 2x2
[[1, 0], [0, 1]]
>>>
Ln: 76 Col: 4
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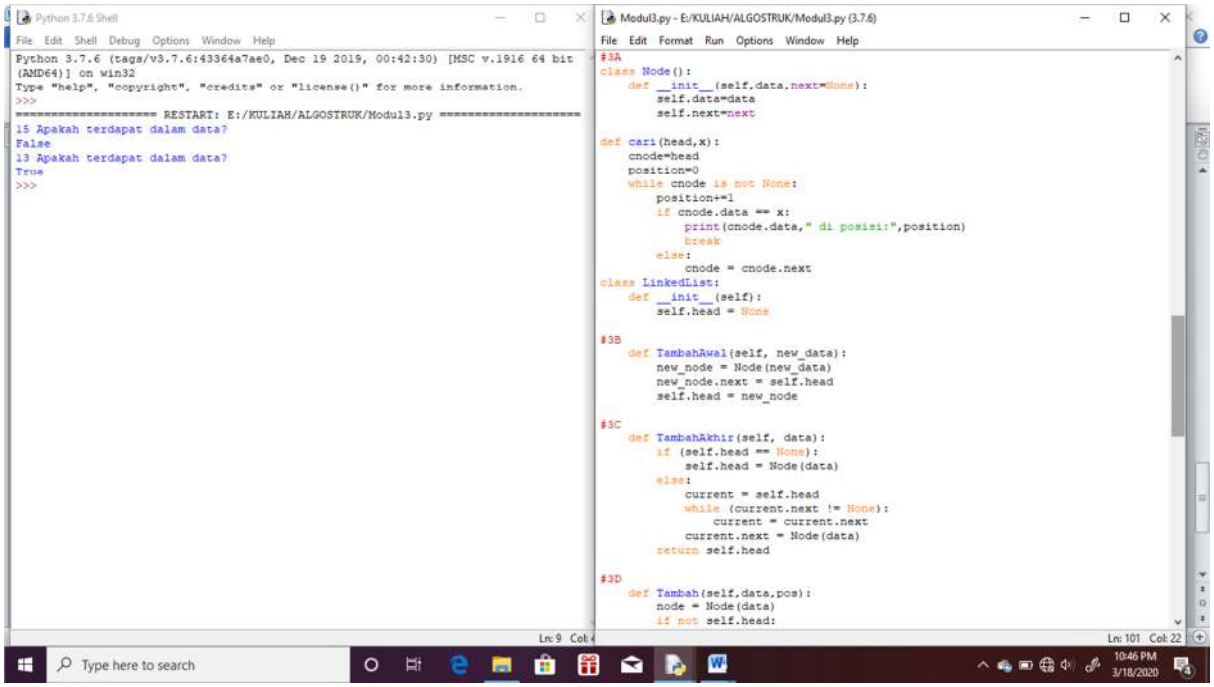
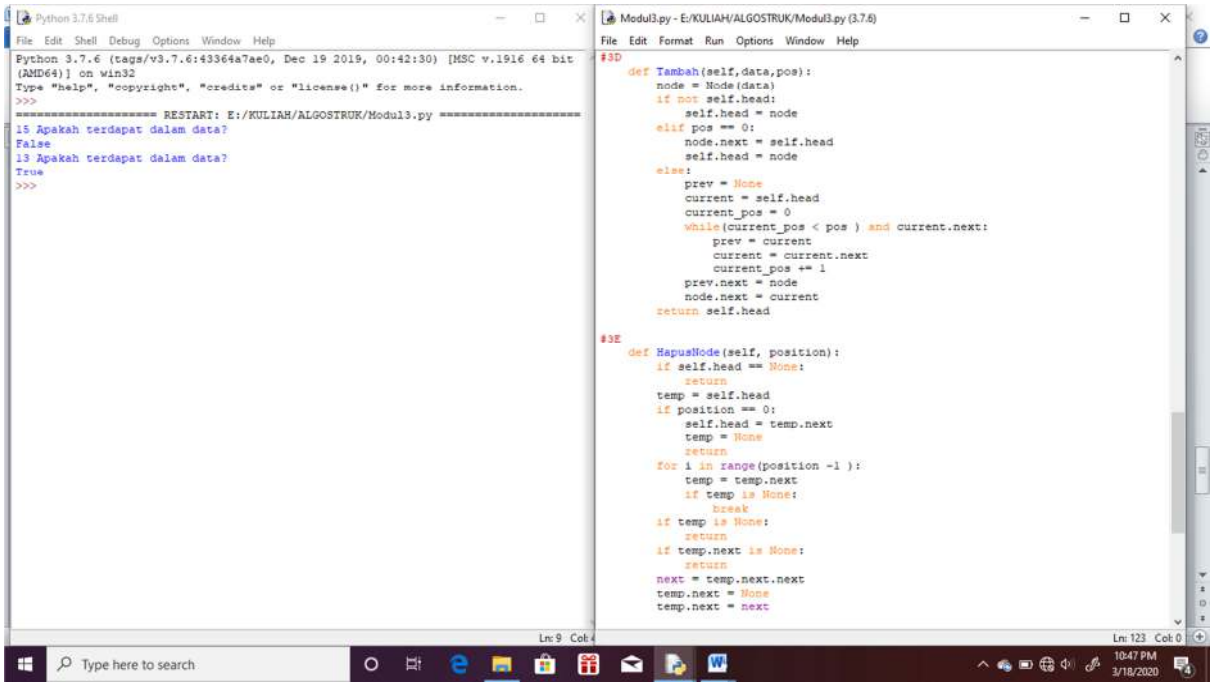
Nomor 3



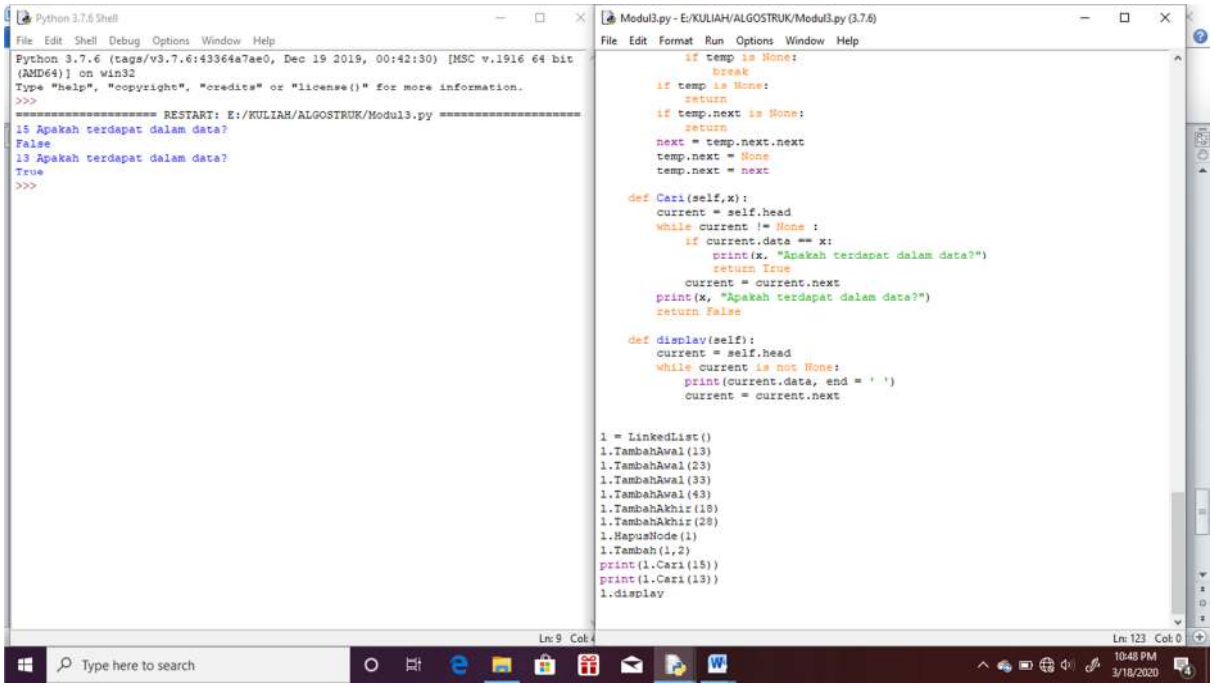
```
Python 3.7.6 (tags/v3.7.6:43364a7ae0, Dec 19 2019, 00:42:30) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
15 Apakah terdapat dalam data?
False
13 Apakah terdapat dalam data?
True
>>>
```

```
#3A
class Node():
    def __init__(self,data,next=None):
        self.data=data
        self.next=next

def cari(head,x):
    cnode=head
    position=0
    while cnode is not None:
        position+=1
        if cnode.data == x:
            print(cnode.data," di posisi:",position)
            break
        else:
            cnode = cnode.next
class LinkedList:
    def __init__(self):
        self.head = None

#3B
    def TambahAwal(self, new_data):
        new_node = Node(new_data)
        new_node.next = self.head
        self.head = new_node

#3C
    def TambahAkhir(self, data):
        if (self.head == None):
            self.head = Node(data)
        else:
            current = self.head
            while (current.next != None):
                current = current.next
            current.next = Node(data)
        return self.head

#3D
    def Tambah(self,data,pos):
        node = Node(data)
        if not self.head:
```



```
Python 3.7.6 (tags/v3.7.6:43364a7ae0, Dec 19 2019, 00:42:30) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
15 Apakah terdapat dalam data?
False
13 Apakah terdapat dalam data?
True
>>>
```

```
#3D
    def Tambah(self,data,pos):
        node = Node(data)
        if not self.head:
            self.head = node
        elif pos == 0:
            node.next = self.head
            self.head = node
        else:
            prev = None
            current = self.head
            current_pos = 0
            while(current_pos < pos ) and current.next:
                prev = current
                current = current.next
                current_pos += 1
            prev.next = node
            node.next = current
        return self.head

#3E
    def HapusNode(self, position):
        if self.head == None:
            return
        temp = self.head
        if position == 0:
            self.head = temp.next
            temp = None
            return
        for i in range(position -1 ):
            temp = temp.next
            if temp is None:
                break
        if temp is None:
            return
        if temp.next is None:
            return
        next = temp.next.next
        temp.next = None
        temp.next = next
```


Python 3.7.6 Shell
File Edit Shell Debug Options Window Help
Python 3.7.6 (tags/v3.7.6:43364a7ae0, Dec 19 2019, 00:42:30) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
15 Apakah terdapat dalam data?
False
13 Apakah terdapat dalam data?
True
>>>
Modul3.py - E:/KULIAH/ALGOSTRUK/Modul3.py (3.7.6)
File Edit Format Run Options Window Help
if temp is None:
break
if temp is None:
return
if temp.next is None:
return
next = temp.next.next
temp.next = None
temp.next = next
def Cari(self,x):
current = self.head
while current != None :
if current.data == x:
print(x, "Apakah terdapat dalam data?")
return True
current = current.next
print(x, "Apakah terdapat dalam data?")
return False
def display(self):
current = self.head
while current is not None:
print(current.data, end = ' ')
current = current.next
l = LinkedList()
l.TambahAwal(13)
l.TambahAwal(23)
l.TambahAwal(33)
l.TambahAwal(43)
l.TambahAkhir(18)
l.TambahAkhir(28)
l.HapusNode(1)
l.Tambah(1,2)
print(l.Cari(15))
print(l.Cari(13))
l.display
Ln: 9 Col: 4
Ln: 123 Col: 0
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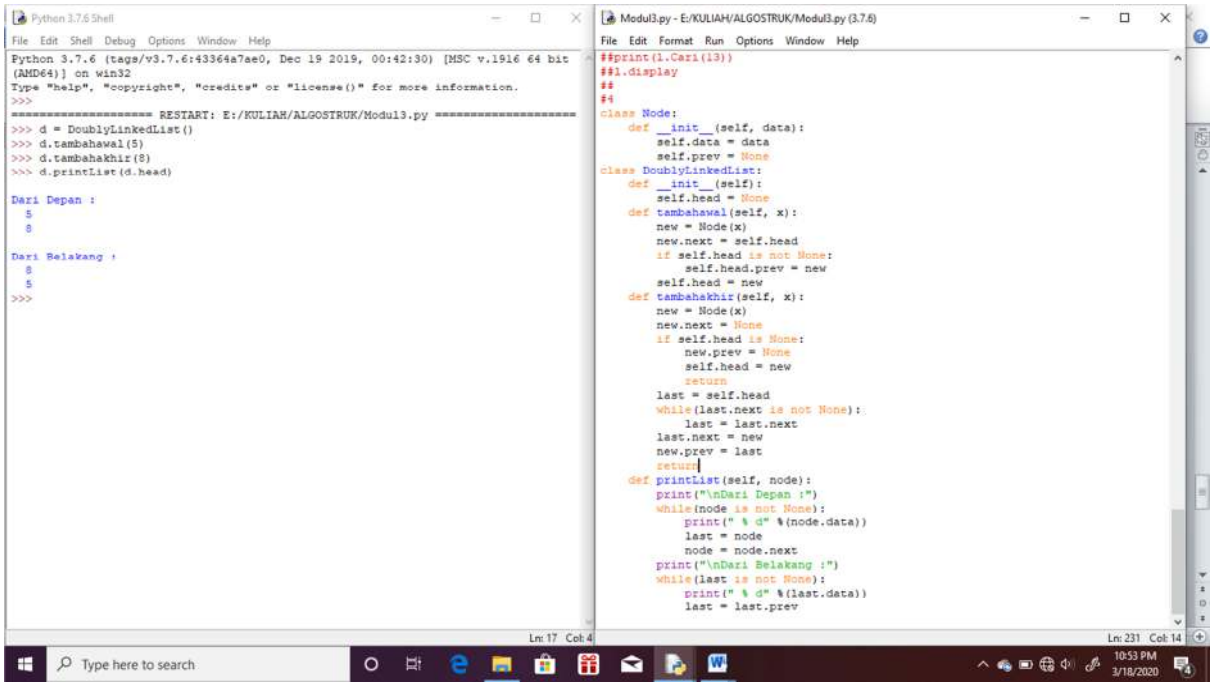
Nomor 4


Python 3.7.6 Shell
File Edit Shell Debug Options Window Help
Python 3.7.6 (tags/v3.7.6:43364a7ae0, Dec 19 2019, 00:42:30) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/KULIAH/ALGOSTRUK/Modul3.py ==========
>>> d = DoublyLinkedList()
>>> d.tambahawal(5)
>>> d.tambahakhir(8)
>>> d.printList(d.head)
Dari Depan :
5
8
Dari Belakang :
8
5
>>>
Modul3.py - E:/KULIAH/ALGOSTRUK/Modul3.py (3.7.6)
File Edit Format Run Options Window Help
##print(l.Cari(13))
##l.display
##
#4
class Node:
def __init__(self, data):
self.data = data
self.prev = None
class DoublyLinkedList:
def __init__(self):
self.head = None
def tambahawal(self, x):
new = Node(x)
new.next = self.head
if self.head is not None:
self.head.prev = new
self.head = new
def tambahakhir(self, x):
new = Node(x)
new.next = None
if self.head is None:
new.prev = None
self.head = new
return
last = self.head
while(last.next is not None):
last = last.next
last.next = new
new.prev = last
return
def printList(self, node):
print("\nDari Depan :")
while(node is not None):
print(" %d" %(node.data))
last = node
node = node.next
print("\nDari Belakang :")
while(last is not None):
print(" %d" %(last.data))
last = last.prev
Ln: 17 Col: 4
Ln: 231 Col: 14
Type here to search
10:53 PM
3/18/2020