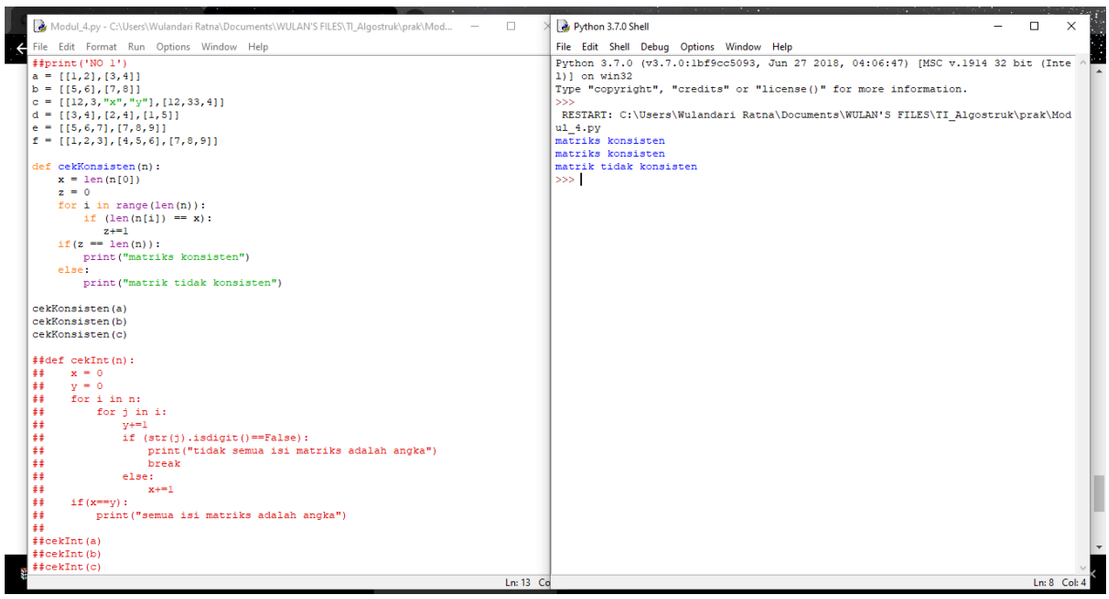
Nama : Wulandari Ratna Kartika Jayawardani

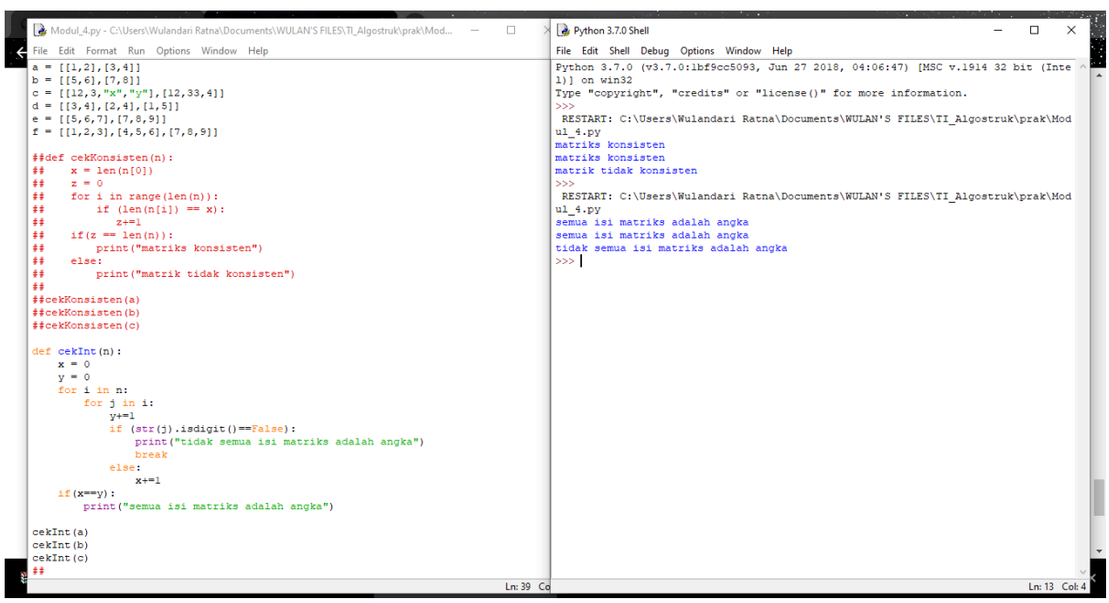
NIM : L200180091

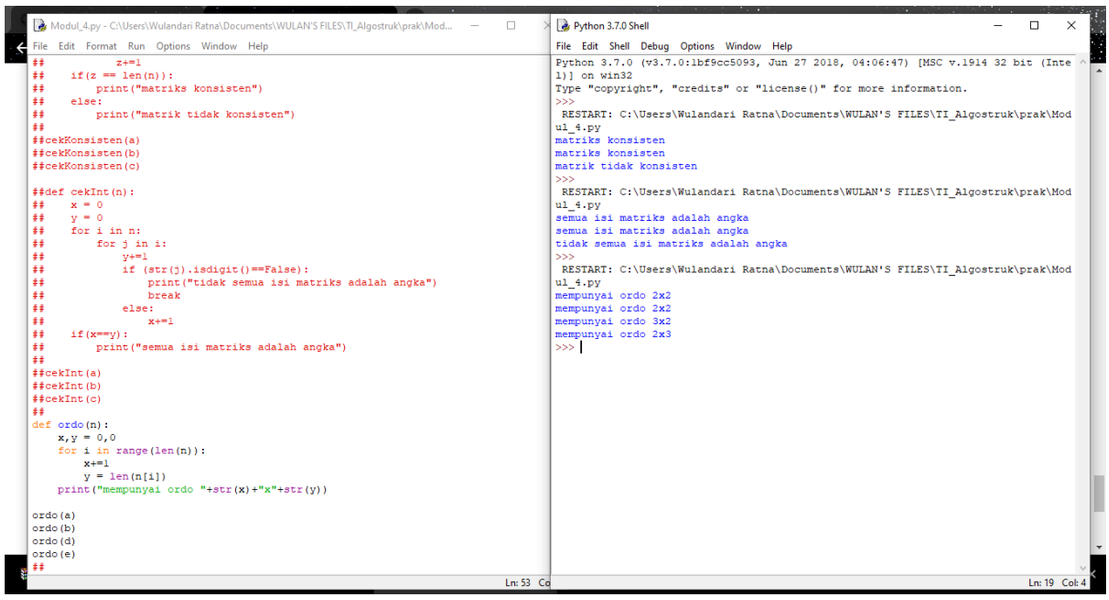
Kelas : D

Modul 3

Nomor 1.







Modul_4.py - C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod...

File Edit Format Run Options Window Help

```
##            z+=1
##    if(z == len(n)):
##        print("matriks konsisten")
##    else:
##        print("matrik tidak konsisten")
##
##cekKonsisten(a)
##cekKonsisten(b)
##cekKonsisten(c)

##def cekInt(n):
##    x = 0
##    y = 0
##    for i in n:
##        for j in i:
##            y+=1
##            if (str(j).isdigit()==False):
##                print("tidak semua isi matriks adalah angka")
##                break
##            else:
##                x+=1
##    if(x==y):
##        print("semua isi matriks adalah angka")
##
##cekInt(a)
##cekInt(b)
##cekInt(c)
##
def ordo(n):
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    print("mempunyai ordo "+str(x)+"x"+str(y))

ordo(a)
ordo(b)
ordo(d)
ordo(e)
##
```

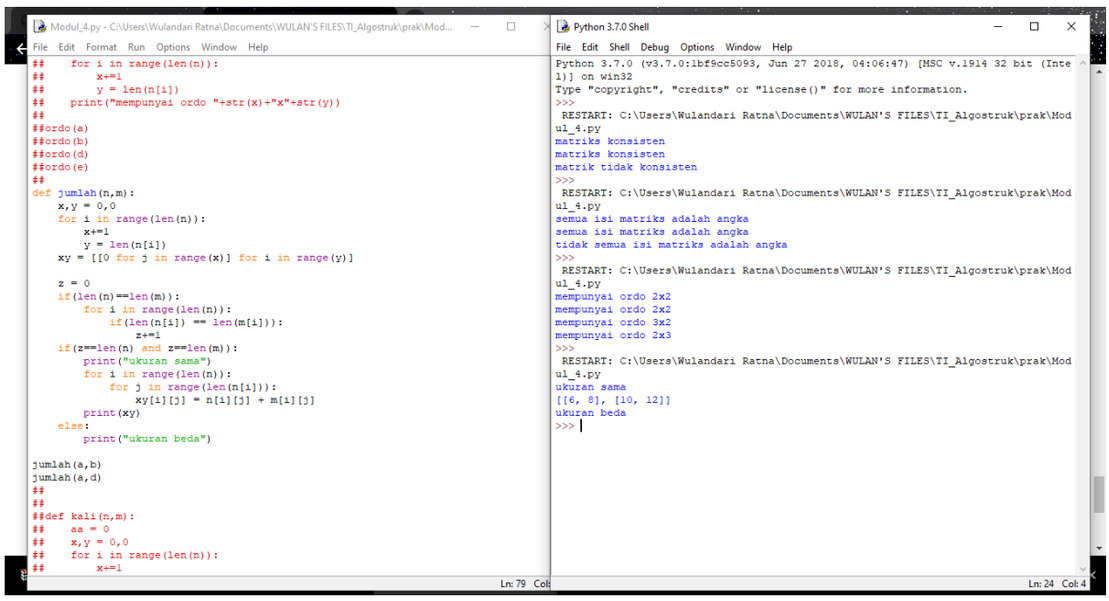
Ln: 53 Co

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
matriks konsisten
matriks konsisten
matrik tidak konsisten
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 3x2
mempunyai ordo 2x3
>>>
```

Ln: 19 Col: 4



Modul_4.py - C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod...

File Edit Format Run Options Window Help

```
##    for i in range(len(n)):
##        x+=1
##        y = len(n[i])
##    print("mempunyai ordo "+str(x)+"x"+str(y))
##
##ordo(a)
##ordo(b)
##ordo(d)
##ordo(e)
##
def jumlah(n,m):
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    xy = [[0 for j in range(x)] for i in range(y)]

    z = 0
    if(len(n)==len(m)):
        for i in range(len(n)):
            if(len(n[i]) == len(m[i])):
                z+=1
    if(z==len(n) and z==len(m)):
        print("ukuran sama")
        for i in range(len(n)):
            for j in range(len(n[i])):
                xy[i][j] = n[i][j] + m[i][j]
        print(xy)
    else:
        print("ukuran beda")

jumlah(a,b)
jumlah(a,d)
##
##
##def kali(n,m):
##    aa = 0
##    x,y = 0,0
##    for i in range(len(n)):
##        x+=1
```

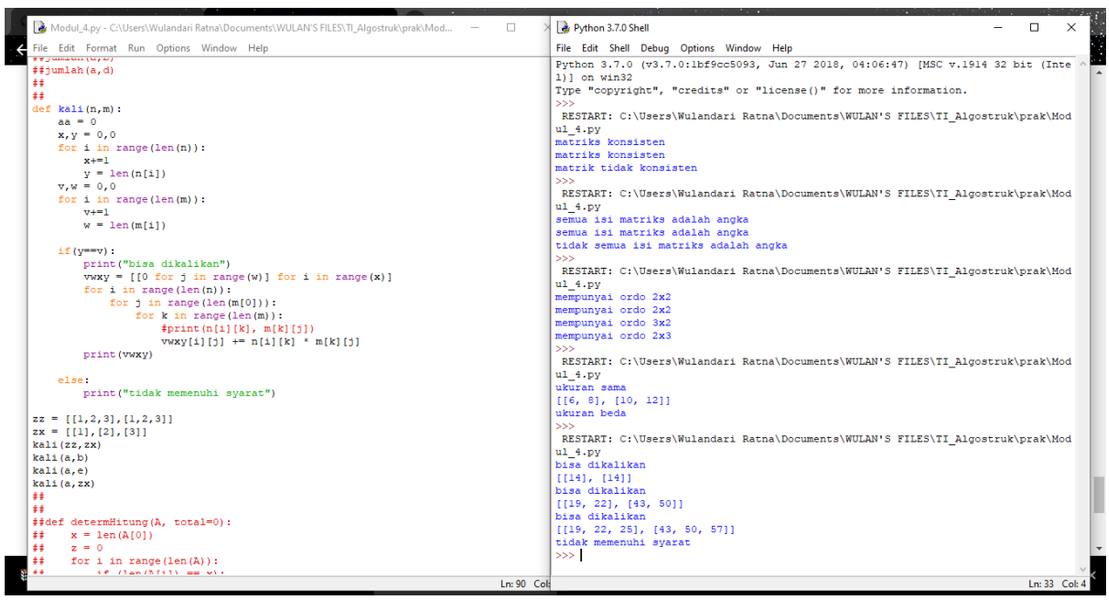
Ln: 79 Col

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
matriks konsisten
matriks konsisten
matrik tidak konsisten
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 3x2
mempunyai ordo 2x3
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
ukuran sama
[[6, 8], [10, 12]]
ukuran beda
>>>
```

Ln: 24 Col: 4



Modul_4.py - C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod...

File Edit Format Run Options Window Help

```
##jumlah(a,d)
##
##
def kali(n,m):
    aa = 0
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    v,w = 0,0
    for i in range(len(m)):
        v+=1
        w = len(m[i])

    if(y==v):
        print("bisa dikalikan")
        vwxy = [[0 for j in range(w)] for i in range(x)]
        for i in range(len(n)):
            for j in range(len(m[0])):
                for k in range(len(m)):
                    #print(n[i][k], m[k][j])
                    vwxy[i][j] += n[i][k] * m[k][j]
        print(vwxy)

    else:
        print("tidak memenuhi syarat")

zz = [[1,2,3],[1,2,3]]
zx = [[1],[2],[3]]
kali(zz,zx)
kali(a,b)
kali(a,c)
kali(a,zx)
##
##
##def determHitung(A, total=0):
##    x = len(A[0])
##    z = 0
##    for i in range(len(A)):
```

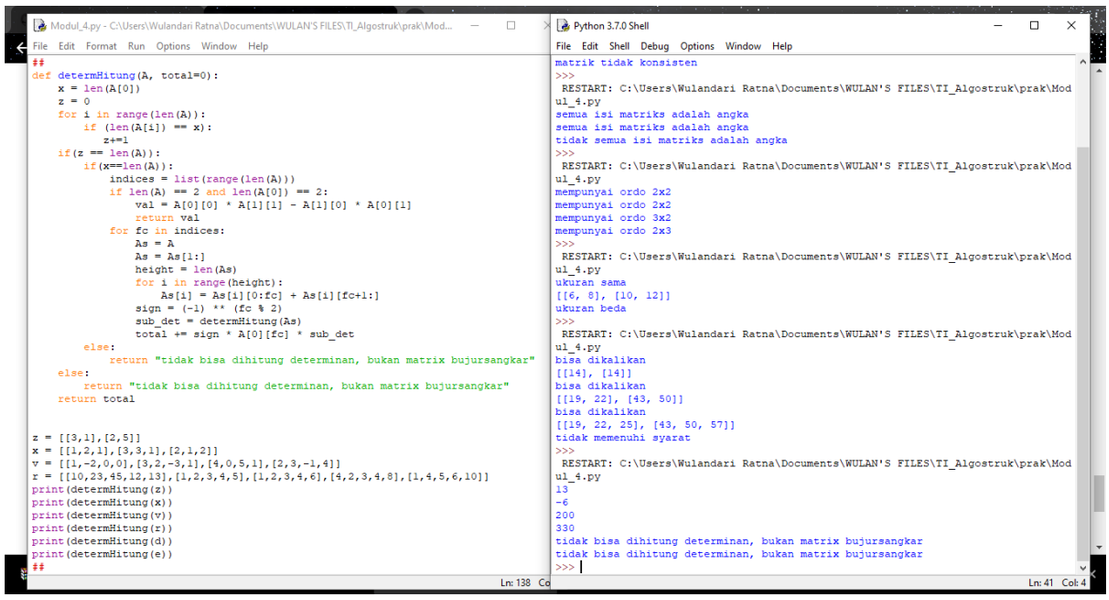
Ln: 90 Col

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
matriks konsisten
matriks konsisten
matrik tidak konsisten
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 3x2
mempunyai ordo 2x3
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
ukuran sama
[[6, 8], [10, 12]]
ukuran beda
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[19, 22], [43, 50]]
bisa dikalikan
[[19, 22, 25], [43, 50, 57]]
tidak memenuhi syarat
>>>
```

Ln: 33 Col: 4

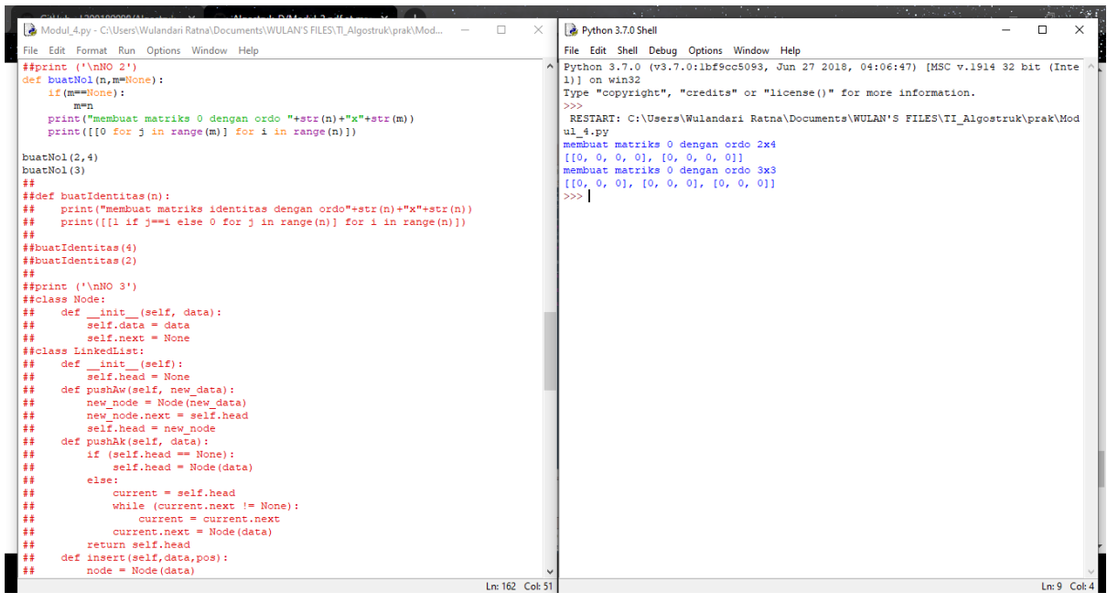


```
##
def determHitung(A, total=0):
    x = len(A[0])
    z = 0
    for i in range(len(A)):
        if (len(A[i]) == x):
            z+=1
    if(z == len(A)):
        if(x==len(A)):
            indices = list(range(len(A)))
            if len(A) == 2 and len(A[0]) == 2:
                val = A[0][0] * A[1][1] - A[1][0] * A[0][1]
                return val
            for fc in indices:
                As = A
                As = As[1:]
                height = len(As)
                for i in range(height):
                    As[i] = As[i][0:fc] + As[i][fc+1:]
                sign = (-1) ** (fc % 2)
                sub_det = determHitung(As)
                total += sign * A[0][fc] * sub_det
        else:
            return "tidak bisa dihitung determinan, bukan matrix bujursangkar"
    else:
        return "tidak bisa dihitung determinan, bukan matrix bujursangkar"
    return total


z = [[3,1],[2,5]]
x = [[1,2,1],[3,3,1],[2,1,2]]
v = [[1,-2,0,0],[3,2,-3,1],[4,0,5,1],[2,3,-1,4]]
r = [[10,23,45,12,13],[1,2,3,4,5],[1,2,3,4,6],[4,2,3,4,8],[1,4,5,6,10]]
print(determHitung(z))
print(determHitung(x))
print(determHitung(v))
print(determHitung(r))
print(determHitung(d))
print(determHitung(e))
##
```

```
matrik tidak konsisten
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 3x2
mempunyai ordo 2x3
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
ukuran sama
[[6, 8], [10, 12]]
ukuran beda
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[19, 22], [43, 50]]
bisa dikalikan
[[19, 22, 25], [43, 50, 57]]
tidak memenuhi syarat
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
13
-6
200
330
tidak bisa dihitung determinan, bukan matrix bujursangkar
tidak bisa dihitung determinan, bukan matrix bujursangkar
>>>
```

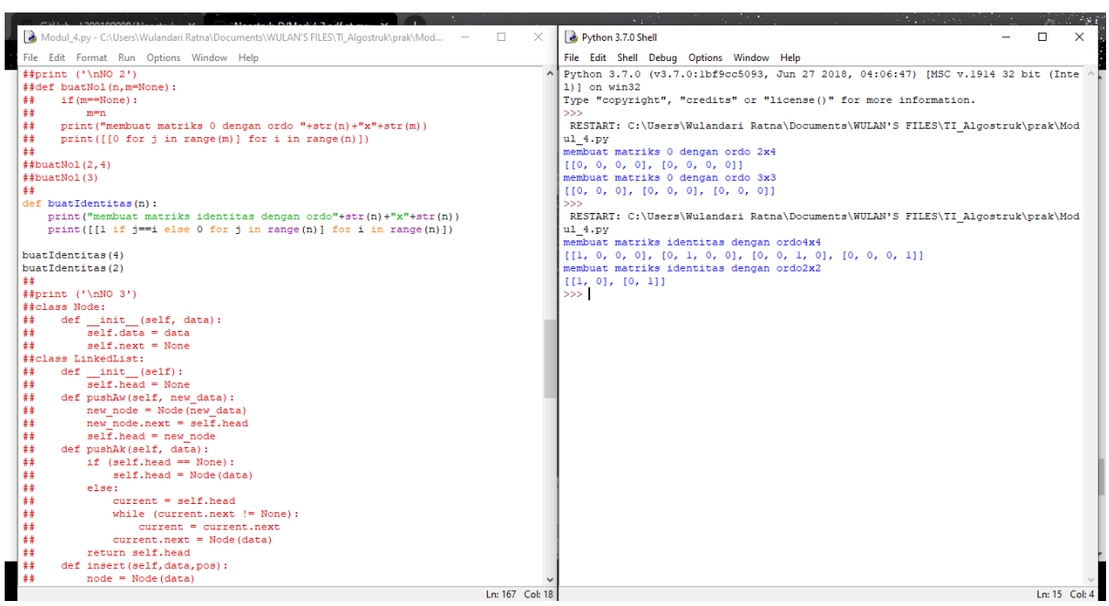
Nomor 2.



```
##print ('\nNO 2')
def buatNol(n,m=None):
    if(m==None):
        m=n
    print("membuat matriks 0 dengan ordo "+str(n)+"x"+str(m))
    print([[0 for j in range(m)] for i in range(n)])

buatNol(2,4)
buatNol(3)
##
##def buatIdentitas(n):
##    print("membuat matriks identitas dengan ordo"+str(n)+"x"+str(n))
##    print([[1 if j==i else 0 for j in range(n)] for i in range(n)])
##
##buatIdentitas(4)
##buatIdentitas(2)
##
##print ('\nNO 3')
##class Node:
##    def __init__(self, data):
##        self.data = data
##        self.next = None
##class LinkedList:
##    def __init__(self):
##        self.head = None
##    def pushAw(self, new_data):
##        new_node = Node(new_data)
##        new_node.next = self.head
##        self.head = new_node
##    def pushAk(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
##    def insert(self,data,pos):
##        node = Node(data)
```

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
membuat matriks 0 dengan ordo 2x4
[[0, 0, 0, 0], [0, 0, 0, 0]]
membuat matriks 0 dengan ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>>
```

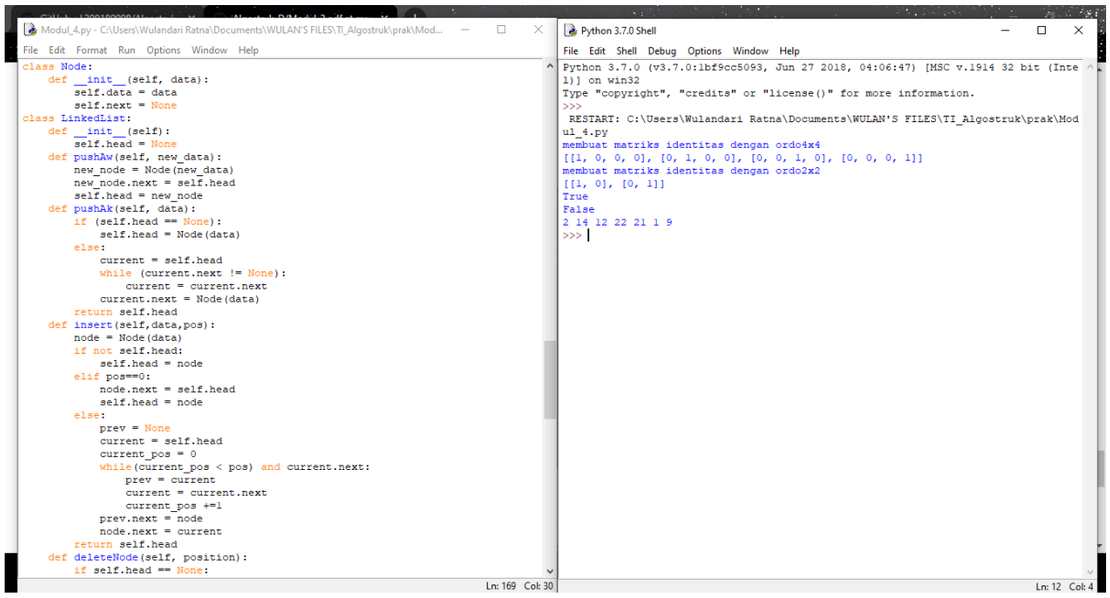


```
##print ('\nNO 2')
##def buatNol(n,m=None):
##    if(m==None):
##        m=n
##    print("membuat matriks 0 dengan ordo "+str(n)+"x"+str(m))
##    print([[0 for j in range(m)] for i in range(n)])
##
##buatNol(2,4)
##buatNol(3)
##
def buatIdentitas(n):
    print("membuat matriks identitas dengan ordo"+str(n)+"x"+str(n))
    print([[1 if j==i else 0 for j in range(n)] for i in range(n)])

buatIdentitas(4)
buatIdentitas(2)
##
##print ('\nNO 3')
##class Node:
##    def __init__(self, data):
##        self.data = data
##        self.next = None
##class LinkedList:
##    def __init__(self):
##        self.head = None
##    def pushAw(self, new_data):
##        new_node = Node(new_data)
##        new_node.next = self.head
##        self.head = new_node
##    def pushAk(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
##    def insert(self,data,pos):
##        node = Node(data)
```

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
membuat matriks 0 dengan ordo 2x4
[[0, 0, 0, 0], [0, 0, 0, 0]]
membuat matriks 0 dengan ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod
ul_4.py
membuat matriks identitas dengan ordo4x4
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
membuat matriks identitas dengan ordo2x2
[[1, 0], [0, 1]]
>>>
```

Nomor 3.



Modul_4.py - C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod...

```
class Node:
    def __init__(self, data):
        self.data = data
        self.next = None
class LinkedList:
    def __init__(self):
        self.head = None
    def pushAw(self, new_data):
        new_node = Node(new_data)
        new_node.next = self.head
        self.head = new_node
    def pushAk(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
    def insert(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
    def deleteNode(self, position):
        if self.head == None:
```

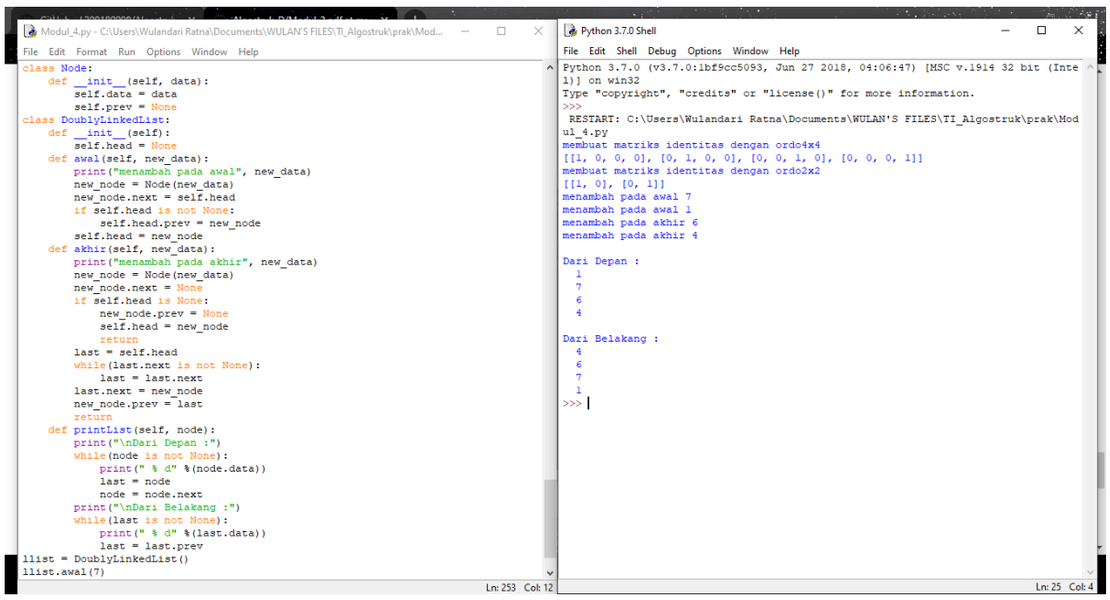
Ln: 169 Col: 30

Python 3.7.0 Shell

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Modul_4.py
membuat matriks identitas dengan ordo4x4
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
membuat matriks identitas dengan ordo2x2
[[1, 0], [0, 1]]
True
False
2 14 12 22 21 1 9
>>>
```

Ln: 12 Col: 4

Nomor 4.



Modul_4.py - C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Mod...

```
class Node:
    def __init__(self, data):
        self.data = data
        self.prev = None
class DoublyLinkedList:
    def __init__(self):
        self.head = None
    def awal(self, new_data):
        print("menambah pada awal", new_data)
        new_node = Node(new_data)
        new_node.next = self.head
        if self.head is not None:
            self.head.prev = new_node
        self.head = new_node
    def akhir(self, new_data):
        print("menambah pada akhir", new_data)
        new_node = Node(new_data)
        new_node.next = None
        if self.head is None:
            new_node.prev = None
            self.head = new_node
            return
        last = self.head
        while(last.next is not None):
            last = last.next
        last.next = new_node
        new_node.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
llist = DoublyLinkedList()
llist.awal(7)
```

Ln: 253 Col: 12

Python 3.7.0 Shell

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Wulandari Ratna\Documents\WULAN'S FILES\TI_Algostruk\prak\Modul_4.py
membuat matriks identitas dengan ordo4x4
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
membuat matriks identitas dengan ordo2x2
[[1, 0], [0, 1]]
menambah pada awal 7
menambah pada awal 1
menambah pada akhir 6
menambah pada akhir 4

Dari Depan :
  1
  7
  6
  4

Dari Belakang :
  4
  6
  7
  1
>>>
```

Ln: 25 Col: 4