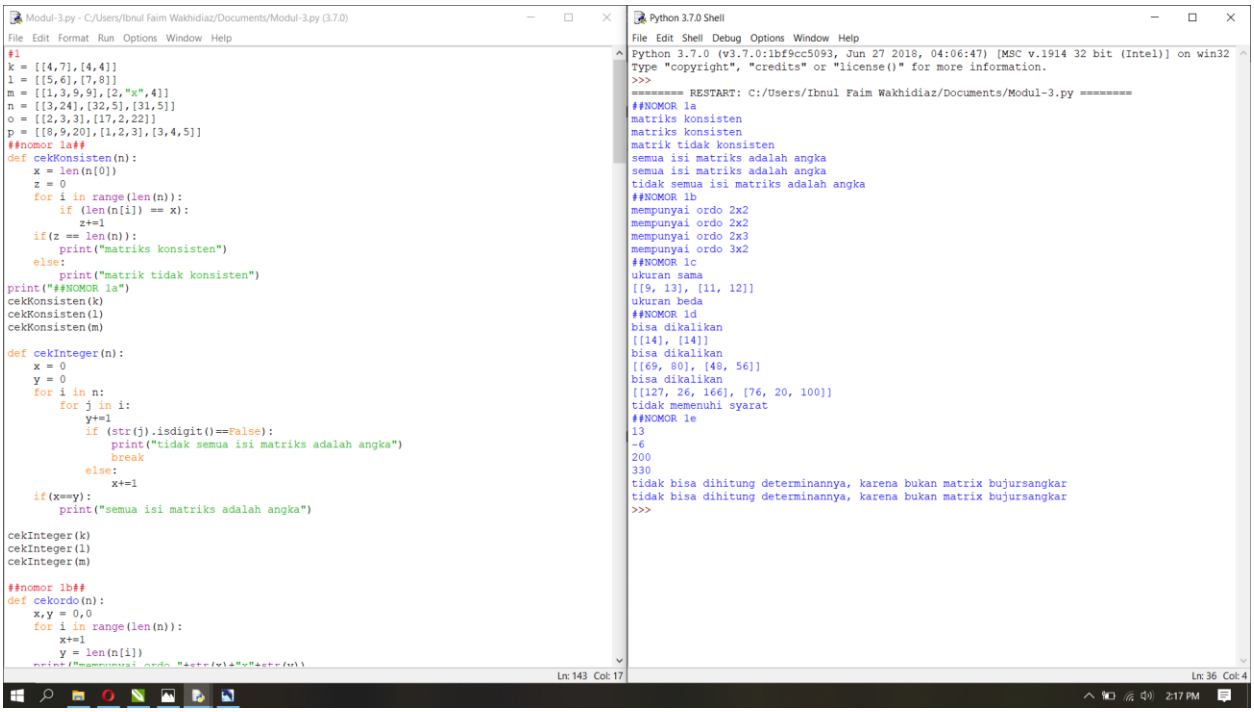
Nama : Ibnul Faim Wakhidiaz

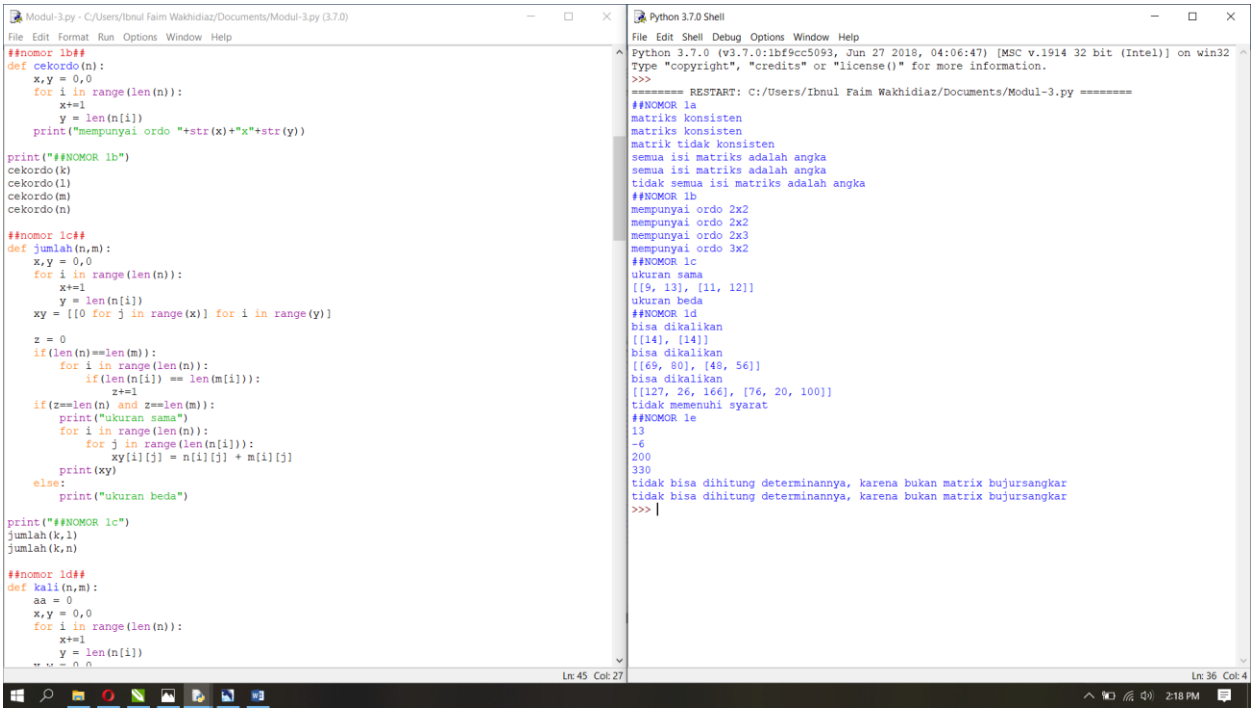
Kelas : B

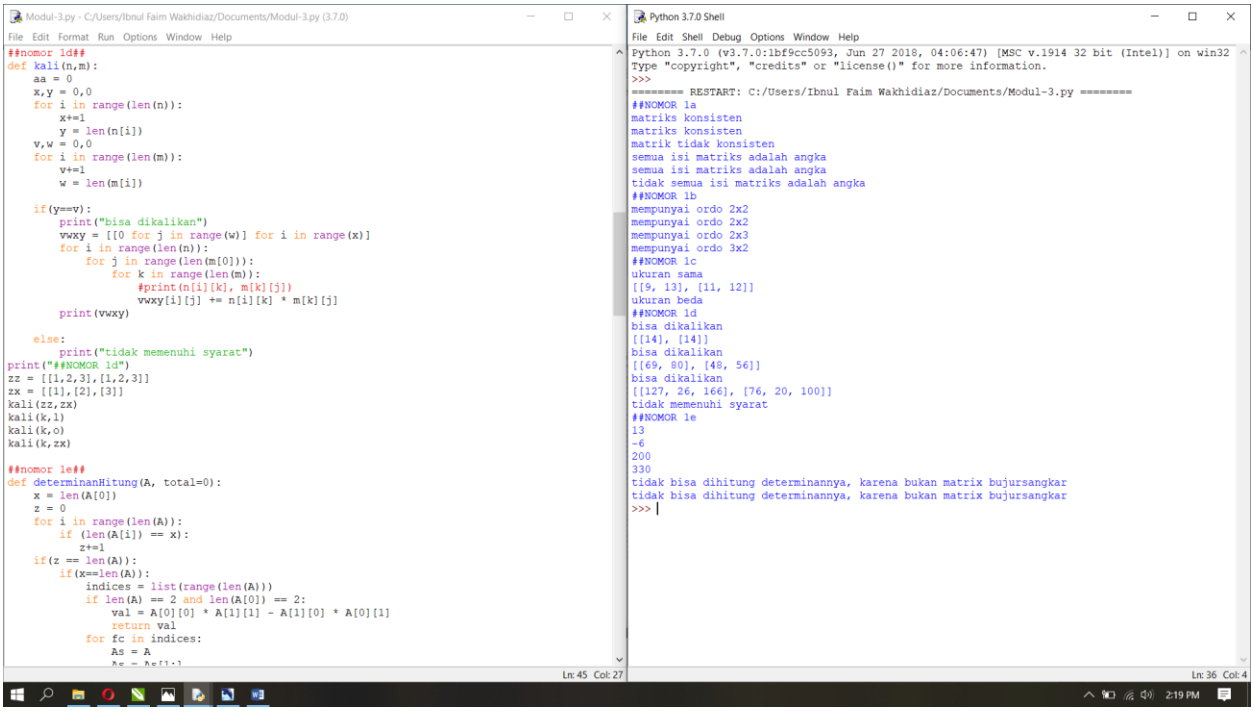
NIM : L200180030

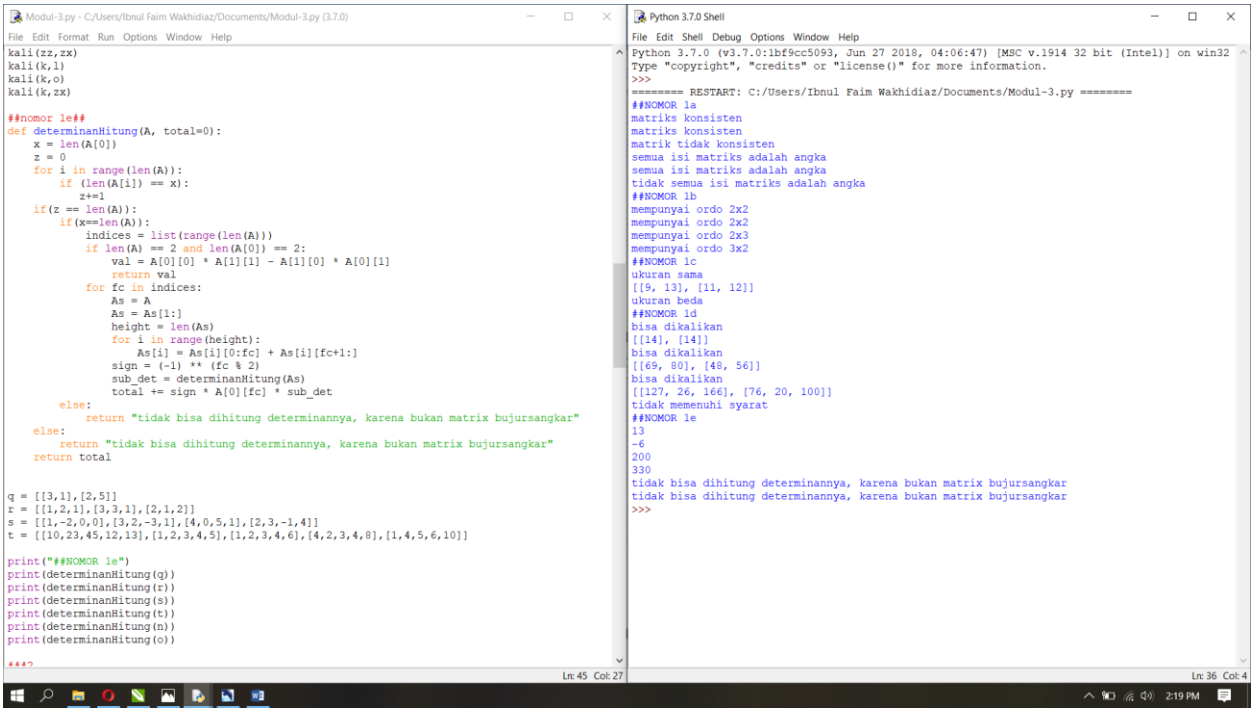
Modul 3

1.




Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
##nomor 1b##
def cekordo(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))
print("##NOMOR 1b")
cekordo(k)
cekordo(l)
cekordo(m)
cekordo(n)
##nomor 1c##
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")
print("##NOMOR 1c")
jumlah(k,l)
jumlah(k,n)
##nomor 1d##
def kali(n,m):
aa = 0
x,y = 0,0
for i in range(len(n)):
x+=1
y = len(n[i])
Ln: 45 Col: 27
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
##NOMOR 1a
matriks konsisten
matriks konsisten
matrik tidak konsisten
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
##NOMOR 1b
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 2x3
mempunyai ordo 3x2
##NOMOR 1c
ukuran sama
[[9, 13], [11, 12]]
ukuran beda
##NOMOR 1d
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[69, 80], [48, 56]]
bisa dikalikan
[[127, 26, 166], [76, 20, 100]]
tidak memenuhi syarat
##NOMOR 1e
13
-6
200
330
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
>>>
Ln: 36 Col: 4
2:18 PM

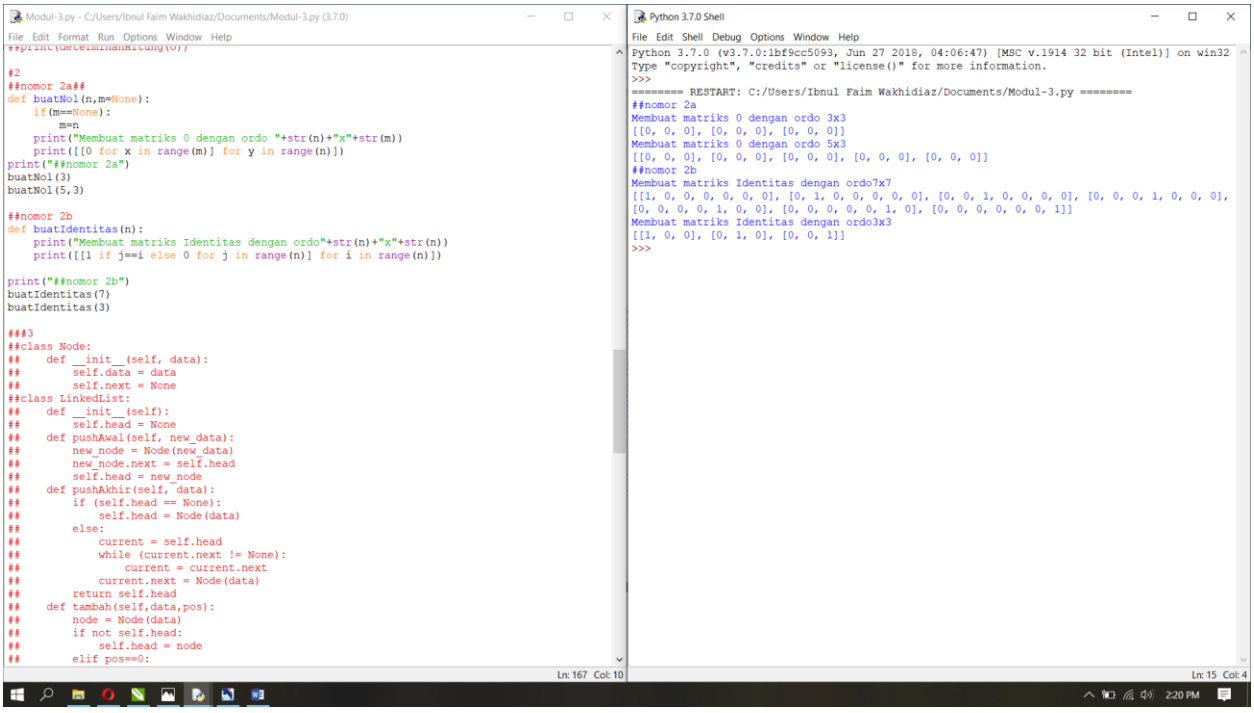

Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
##nomor 1d##
def kali(n,m):
aa = 0
x,y = 0,0
for i in range(len(n)):
x+=1
y = len(n[i])
v,w = 0,0
for i in range(len(m)):
v+=1
w = len(m[i])
if(y==v):
print("bisa dikalikan")
vwxy = [[0 for 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")
print("##NOMOR 1d")
zz = [[1,2,3],[1,2,3]]
zx = [[1],[2],[3]]
kali(zz,zx)
kali(k,l)
kali(k,o)
kali(k,zx)
##nomor 1e##
def determinanHitung(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
Ln: 45 Col: 27
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
##NOMOR 1a
matriks konsisten
matriks konsisten
matrik tidak konsisten
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
##NOMOR 1b
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 2x3
mempunyai ordo 3x2
##NOMOR 1c
ukuran sama
[[9, 13], [11, 12]]
ukuran beda
##NOMOR 1d
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[69, 80], [48, 56]]
bisa dikalikan
[[127, 26, 166], [76, 20, 100]]
tidak memenuhi syarat
##NOMOR 1e
13
-6
200
330
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
>>>
Ln: 36 Col: 4
2:19 PM



```
kali(zz,zx)
kali(k,l)
kali(k,o)
kali(k,zx)

##nomor 1e##
def determinanHitung(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 = determinanHitung(As)
                total += sign * A[0][fc] * sub_det
        else:
            return "tidak bisa dihitung determinannya, karena bukan matrix bujursangkar"
    else:
        return "tidak bisa dihitung determinannya, karena bukan matrix bujursangkar"
    return total


q = [[3,1],[2,5]]
r = [[1,2,1],[3,3,1],[2,1,2]]
s = [[1,-2,0,0],[3,2,-3,1],[4,0,5,1],[2,3,-1,4]]
t = [[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("##NOMOR 1e")
print(determinanHitung(q))
print(determinanHitung(r))
print(determinanHitung(s))
print(determinanHitung(t))
print(determinanHitung(n))
print(determinanHitung(o))

###2
```

```
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/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
##NOMOR 1a
matriks konsisten
matriks konsisten
matrik tidak konsisten
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
##NOMOR 1b
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 2x3
mempunyai ordo 3x2
##NOMOR 1c
ukuran sama
[[9, 13], [11, 12]]
ukuran beda
##NOMOR 1d
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[69, 80], [48, 56]]
bisa dikalikan
[[127, 26, 166], [76, 20, 100]]
tidak memenuhi syarat
##NOMOR 1e
13
-6
200
330
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
tidak bisa dihitung determinannya, karena bukan matrix bujursangkar
>>>
```

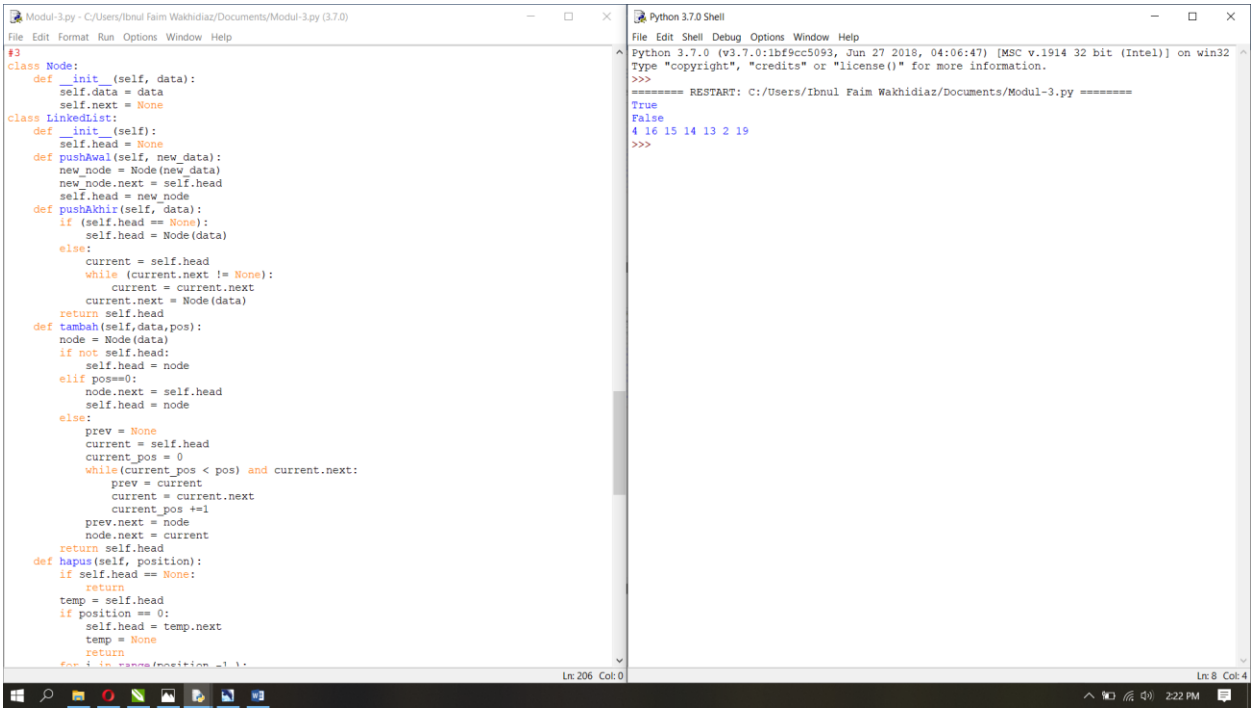
2.

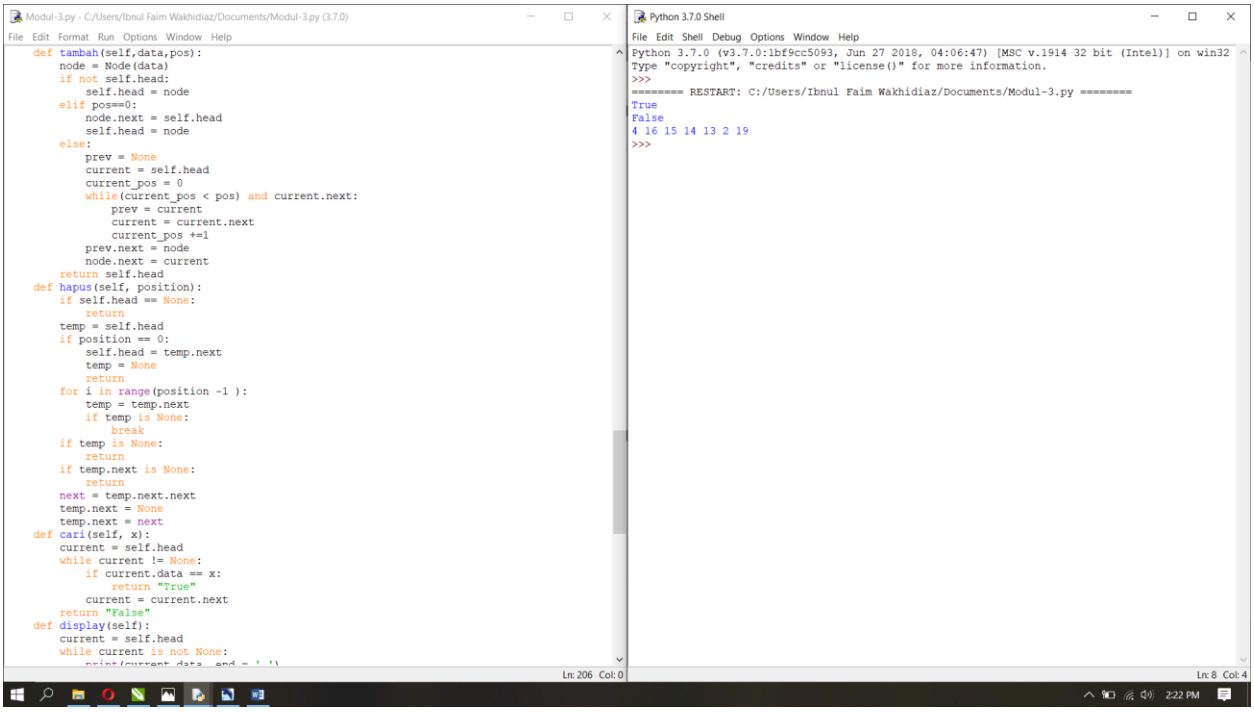


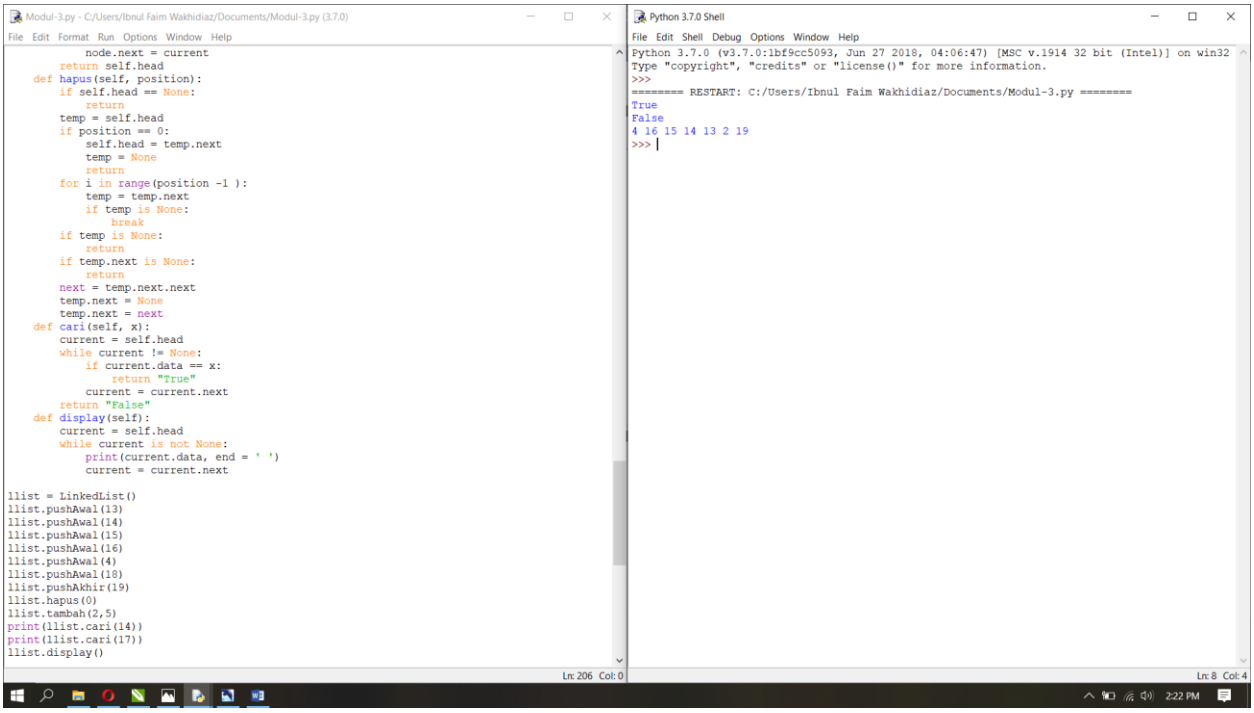
```
#2
##nomor 2a##
def buatNol(n,m=None):
    if(m==None):
        m=n
    print("Membuat matriks 0 dengan ordo "+str(n)+"x"+str(m))
    print([[0 for x in range(m)] for y in range(n)])
print("##nomor 2a")
buatNol(3)
buatNol(5,3)

##nomor 2b
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)])

print("##nomor 2b")
buatIdentitas(7)
buatIdentitas(3)

###3
##class Node:
##    def __init__(self, data):
##        self.data = data
##        self.next = None
##class LinkedList:
##    def __init__(self):
##        self.head = None
##    def pushAwal(self, new_data):
##        new_node = Node(new_data)
##        new_node.next = self.head
##        self.head = new_node
##    def pushAkhir(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 tambah(self,data,pos):
##        node = Node(data)
##        if not self.head:
##            self.head = node
##        elif pos==0:
```

```
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/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
##nomor 2a
Membuat matriks 0 dengan ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
Membuat matriks 0 dengan ordo 5x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0], [0, 0, 0], [0, 0, 0]]
##nomor 2b
Membuat matriks Identitas dengan ordo7x7
[[1, 0, 0, 0, 0, 0, 0], [0, 1, 0, 0, 0, 0, 0], [0, 0, 1, 0, 0, 0, 0], [0, 0, 0, 1, 0, 0, 0],
[0, 0, 0, 0, 1, 0, 0], [0, 0, 0, 0, 0, 1, 0], [0, 0, 0, 0, 0, 0, 1]]
Membuat matriks Identitas dengan ordo3x3
[[1, 0, 0], [0, 1, 0], [0, 0, 1]]
>>>
```

3.


Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
#3
class Node:
def __init__(self, data):
self.data = data
self.next = None
class LinkedList:
def __init__(self):
self.head = None
def pushAwal(self, new_data):
new_node = Node(new_data)
new_node.next = self.head
self.head = new_node
def pushAkhir(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 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
def hapus(self, position):
if self.head == None:
return
temp = self.head
if position == 0:
self.head = temp.next
temp = None
return
Ln: 206 Col: 0
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
True
False
4 16 15 14 13 2 19
>>>
Ln: 8 Col: 4
2:22 PM


Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
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
def hapus(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
def cari(self, x):
current = self.head
while current != None:
if current.data == x:
return "True"
current = current.next
return "False"
def display(self):
current = self.head
while current is not None:
Ln: 206 Col: 0
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
True
False
4 16 15 14 13 2 19
>>>
Ln: 8 Col: 4
2:22 PM



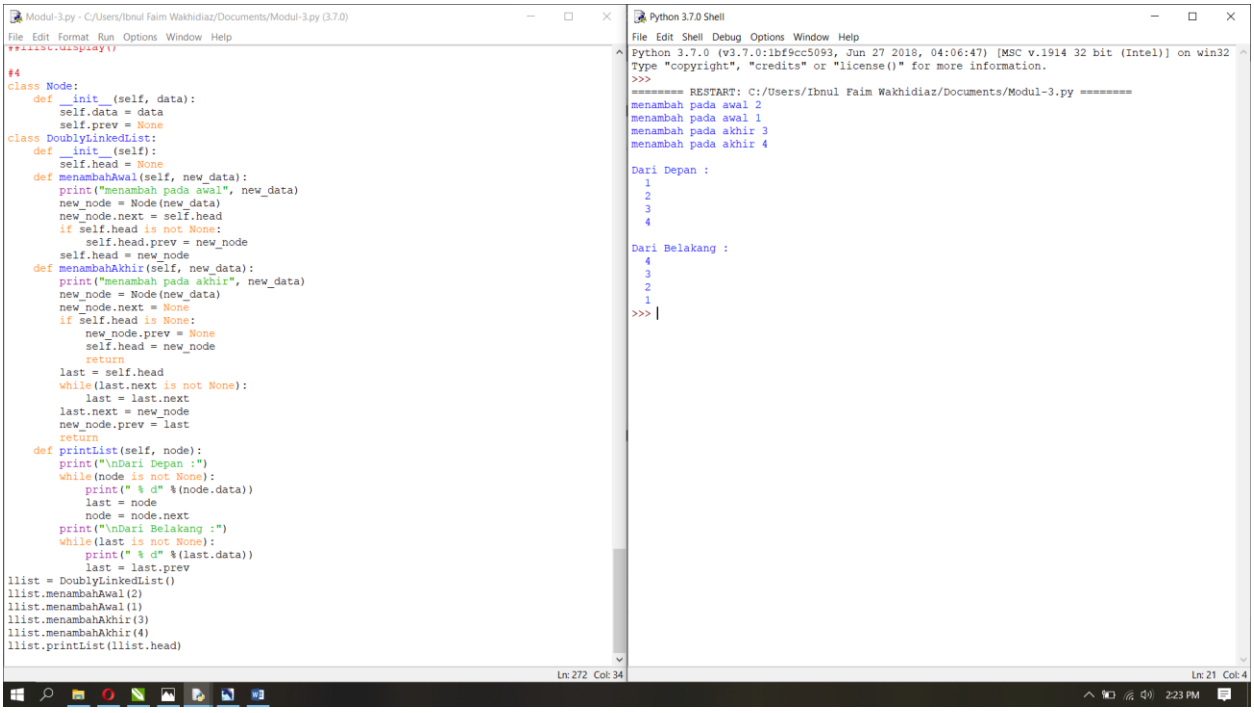
```
Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
            node.next = current
        return self.head
    def hapus(self, position):
        if self.head == None:
            return
        temp = self.head
        if position == 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
    def cari(self, x):
        current = self.head
        while current != None:
            if current.data == x:
                return "True"
            current = current.next
        return "False"
    def display(self):
        current = self.head
        while current is not None:
            print(current.data, end = ' ')
            current = current.next

llist = LinkedList()
llist.pushAwal(13)
llist.pushAwal(14)
llist.pushAwal(15)
llist.pushAwal(16)
llist.pushAwal(4)
llist.pushAwal(18)
llist.pushAkhir(19)
llist.hapus(0)
llist.tambah(2,5)
print(llist.cari(14))
print(llist.cari(17))
llist.display()
```

```
Ln: 206 Col: 0
```

```
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
True
False
4 16 15 14 13 2 19
>>>
```

```
Ln: 8 Col: 4
```

4.



```
Modul-3.py - C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py (3.7.0)
File Edit Format Run Options Window Help
##llist.display()

#4
class Node:
    def __init__(self, data):
        self.data = data
        self.prev = None
class DoublyLinkedList:
    def __init__(self):
        self.head = None
    def menambahAwal(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 menambahAkhir(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.menambahAwal(2)
llist.menambahAwal(1)
llist.menambahAkhir(3)
llist.menambahAkhir(4)
llist.printList(llist.head)
```

```
Ln: 272 Col: 34
```

```
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 (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/Ibnul Faim Wakhidiaz/Documents/Modul-3.py ========
menambah pada awal 2
menambah pada awal 1
menambah pada akhir 3
menambah pada akhir 4

Dari Depan :
  1
  2
  3
  4

Dari Belakang :
  4
  3
  2
  1
>>>
```

```
Ln: 21 Col: 4
```