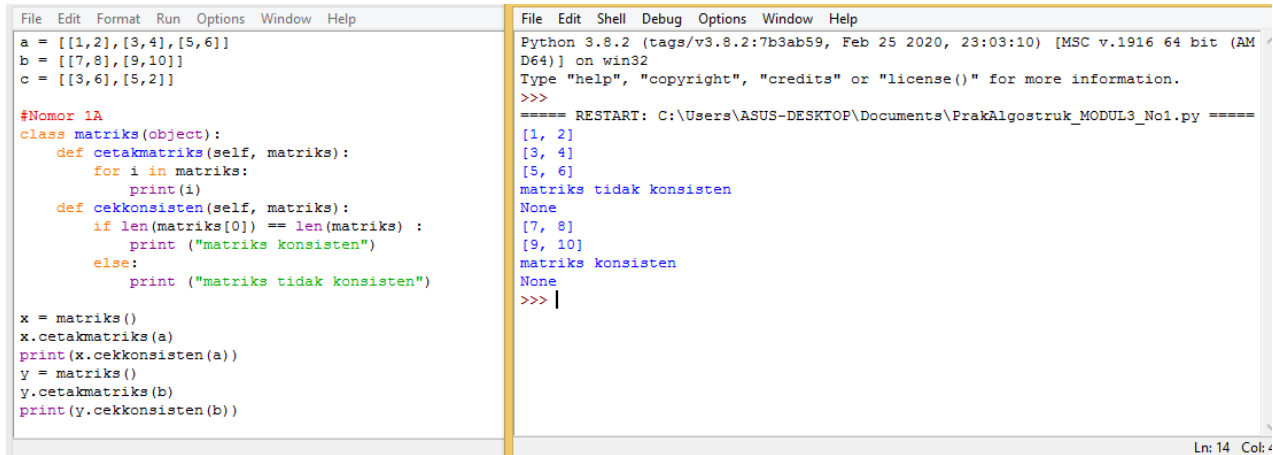


Nama : Anggit Astriani
NIM : L200180111

MODUL 3

Nomor 1A



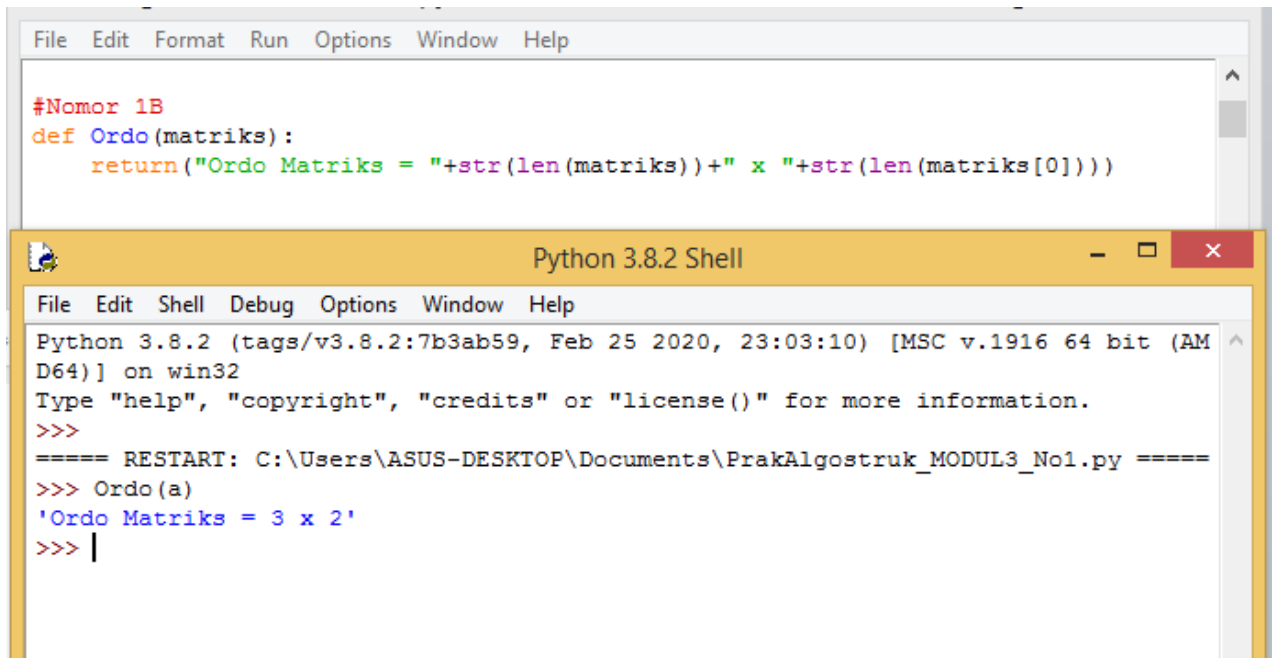
The screenshot shows a Python IDE with two panes. The left pane contains the source code for Nomor 1A, and the right pane shows the execution output.

```
#Nomor 1A
class matriks(object):
    def cetakmatriks(self, matriks):
        for i in matriks:
            print(i)
    def cekkonsisten(self, matriks):
        if len(matriks[0]) == len(matriks) :
            print ("matriks konsisten")
        else:
            print ("matriks tidak konsisten")

x = matriks()
x.cetakmatriks(a)
print(x.cekkonsisten(a))
y = matriks()
y.cetakmatriks(b)
print(y.cekkonsisten(b))
```

The output in the right pane shows the execution of the code. It starts with a restart message, followed by the output of the `cetakmatriks` method for lists `a` and `b`. For `a`, it prints `[1, 2]`, `[3, 4]`, and `[5, 6]`, and then `matriks tidak konsisten`. For `b`, it prints `[7, 8]` and `[9, 10]`, and then `matriks konsisten`.

Nomor 1B

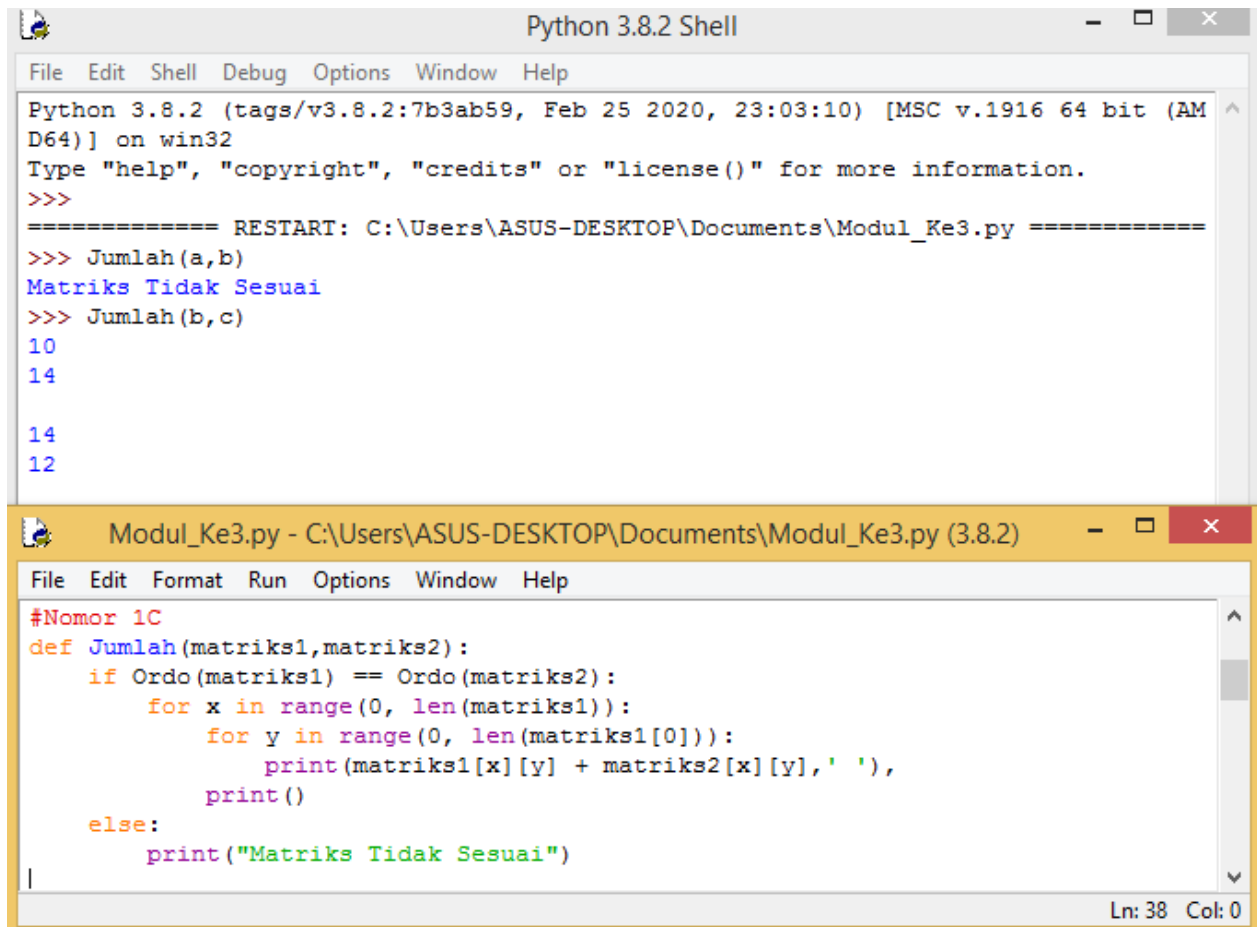


The screenshot shows a Python IDE with two panes. The left pane contains the source code for Nomor 1B, and the right pane shows the execution output.

```
#Nomor 1B
def Ordo(matriks):
    return("Ordo Matriks = "+str(len(matriks))+ " x "+str(len(matriks[0])))
```

The output in the right pane shows the execution of the `Ordo` function with list `a` as an argument. It prints `'Ordo Matriks = 3 x 2'`.

Nomor 1C



The image shows two windows from a Python 3.8.2 environment. The top window is the 'Python 3.8.2 Shell' with a menu bar (File, Edit, Shell, Debug, Options, Window, Help). It displays the following text:

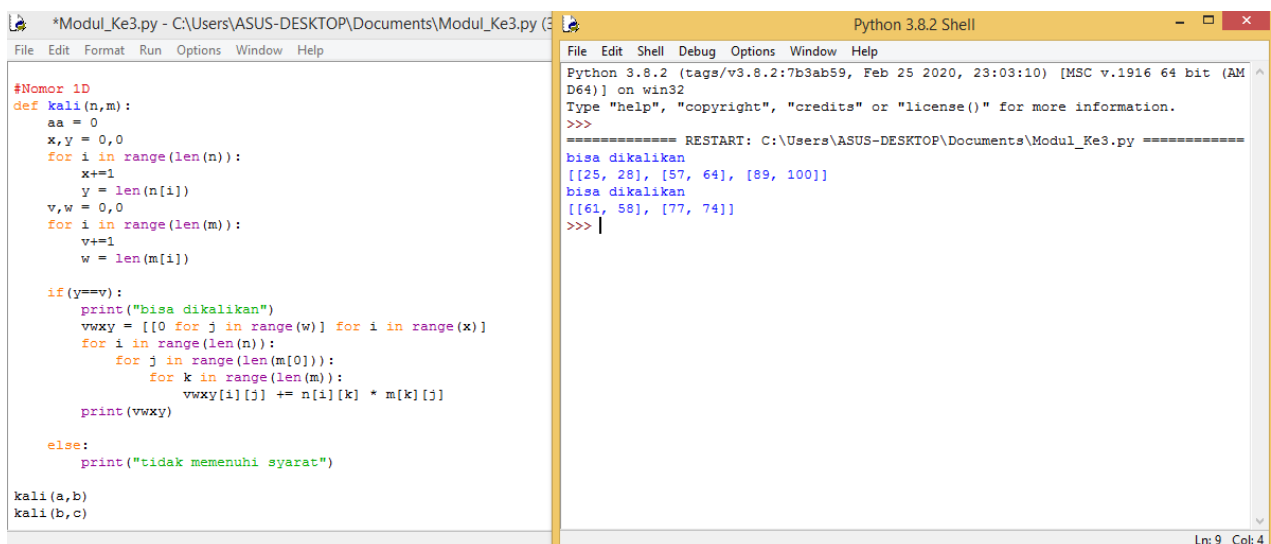
```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py =====
>>> Jumlah(a,b)
Matriks Tidak Sesuai
>>> Jumlah(b,c)
10
14
14
12
```

The bottom window is the 'Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)' editor with a menu bar (File, Edit, Format, Run, Options, Window, Help). It contains the following code:

```
#Nomor 1C
def Jumlah(matriks1,matriks2):
    if Ordo(matriks1) == Ordo(matriks2):
        for x in range(0, len(matriks1)):
            for y in range(0, len(matriks1[0])):
                print(matriks1[x][y] + matriks2[x][y], ' '),
            print()
    else:
        print("Matriks Tidak Sesuai")
```

The status bar at the bottom right of the editor shows 'Ln: 38 Col: 0'.

Nomor 1D



The image shows two windows from a Python 3.8.2 environment. The left window is the 'Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)' editor with a menu bar (File, Edit, Format, Run, Options, Window, Help). It contains the following code:

```
#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)):
                    vwxy[i][j] += n[i][k] * m[k][j]
        print(vwxy)
    else:
        print("tidak memenuhi syarat")

kali(a,b)
kali(b,c)
```

The right window is the 'Python 3.8.2 Shell' with a menu bar (File, Edit, Shell, Debug, Options, Window, Help). It displays the following text:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py =====
bisa dikalikan
[[25, 28], [57, 64], [89, 100]]
bisa dikalikan
[[61, 58], [77, 74]]
>>> |
```

The status bar at the bottom right of the editor shows 'Ln: 9 Col: 4'.

```
Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)
File Edit Format Run Options Window Help
def determinan(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 = determinan(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
Ln: 67 Col: 1
```

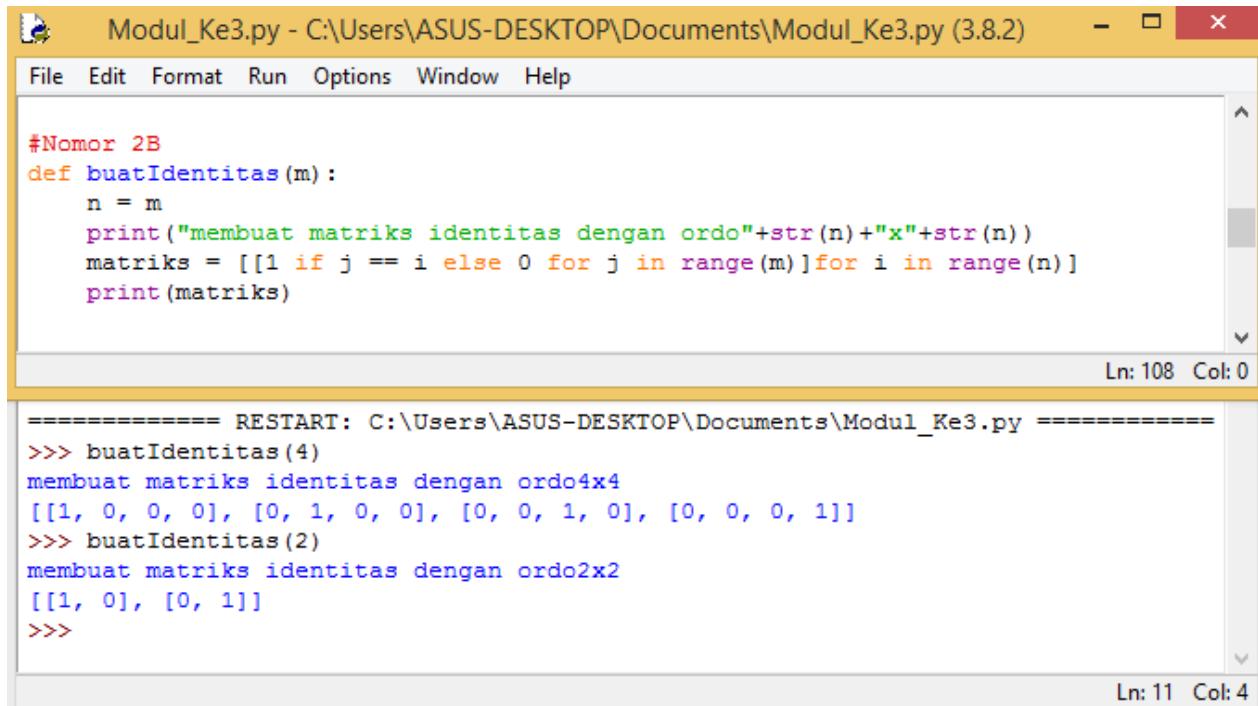
```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py =====
>>> determinan(a)
'tidak bisa dihitung determinan, bukan matrix bujursangkar'
>>> determinan(b)
-2
>>> determinan(c)
-24
>>> |
Ln: 11 Col: 4
```

Nomor 2A

```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py =====
>>> buatNol(2,4)
membuat matriks 0 dengan ordo 2x4
[[0, 0, 0, 0], [0, 0, 0, 0]]
>>> buatNol(3)
membuat matriks 0 dengan ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>>
```

```
Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)
File Edit Format Run Options Window Help
#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 j in range(m)] for i in range(n)])
Ln: 100 Col: 52
```

Nomor 2B



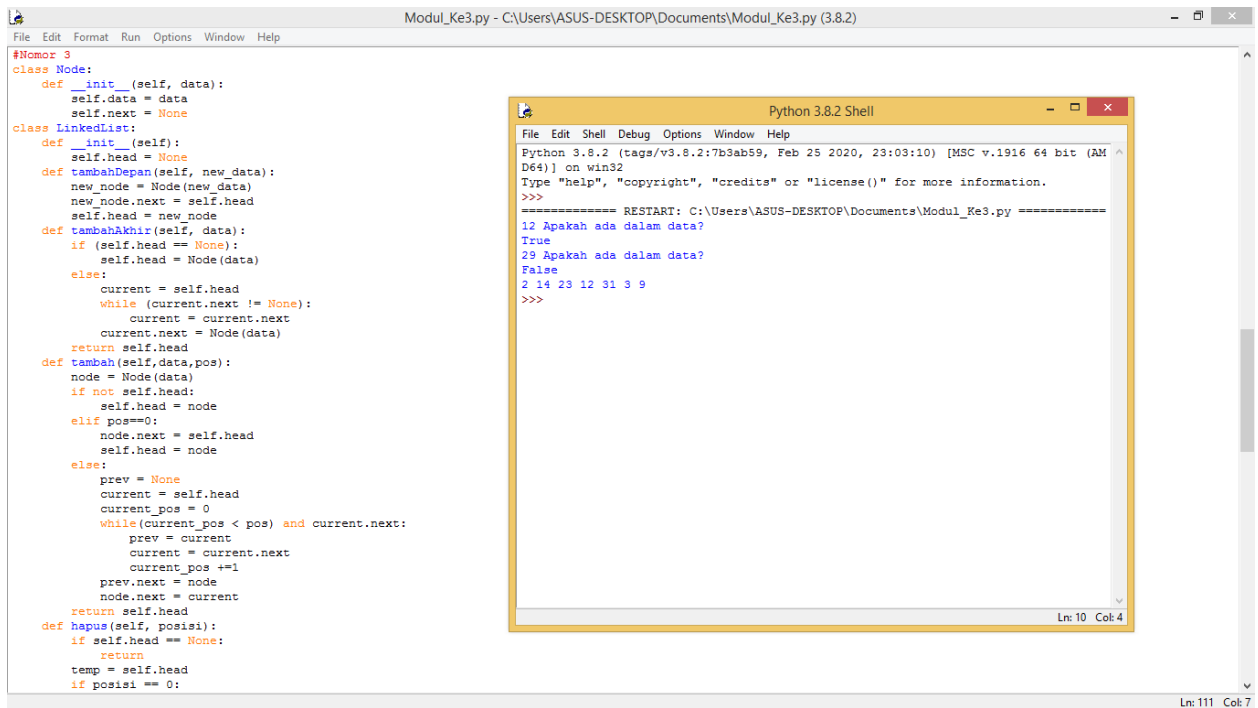
The screenshot shows a Python IDE window titled "Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)". The code defines a function `buatIdentitas(m)` that prints an identity matrix of size `m`. The execution output shows the function being called with `4` and `2`, resulting in the following matrices:

```
=====  
>>> buatIdentitas(4)  
membuat matriks identitas dengan ordo4x4  
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]  
>>> buatIdentitas(2)  
membuat matriks identitas dengan ordo2x2  
[[1, 0], [0, 1]]  
>>>
```

Ln: 108 Col: 0

Ln: 11 Col: 4

Nomor 3



The screenshot shows a Python IDE window titled "Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)". The code defines a `Node` class and a `LinkedList` class. The `LinkedList` class has methods `tambahDepan`, `tambahAkhir`, `tambah`, and `hapus`. The execution output shows the `LinkedList` class being instantiated and the `tambah` method being called with the value `12`.

```
=====  
>>> linkedList = LinkedList()  
>>> linkedList.tambah(12)  
12 Apakah ada dalam data?  
True  
>>>
```

Ln: 110 Col: 4

Ln: 111 Col: 7

```
        self.head = temp.next
        temp = None
        return
    for i in range(posisi - 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:
            print(x, "Apakah ada dalam data?")
            return True
        current = current.next
    print(x, "Apakah ada dalam data?")
    return False

def display(self):
    current = self.head
    while current is not None:
        print(current.data, end = ' ')
        current = current.next

a = LinkedList()
a.tambahDepan(31)
a.tambahDepan(12)
a.tambahDepan(23)
a.tambahDepan(14)
a.tambahDepan(2)
a.tambahDepan(19)
a.tambahAkhir(9)
a.hapus(0)
a.tambah(3,5)
print(a.cari(12))
print(a.cari(29))
a.display()
```

Ln: 111 Col: 7

Nomor 4

Modul_Ke3.py - C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py (3.8.2)

```
#Nomor 4
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
        else:
            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

b = DoublyLinkedList()
b.awal(8)
b.awal(1)
b.akhir(7)
b.akhir(3)
b.printList(b.head)
```

Python 3.8.2 Shell

```
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 23:03:10) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\ASUS-DESKTOP\Documents\Modul_Ke3.py =====
>>>
menambah pada awal 8
menambah pada awal 1
menambah pada akhir 7
menambah pada akhir 3

Dari Depan :
1
8
7
3

Dari Belakang :
3
7
8
1
>>>
```

Ln: 225 Col: 32