

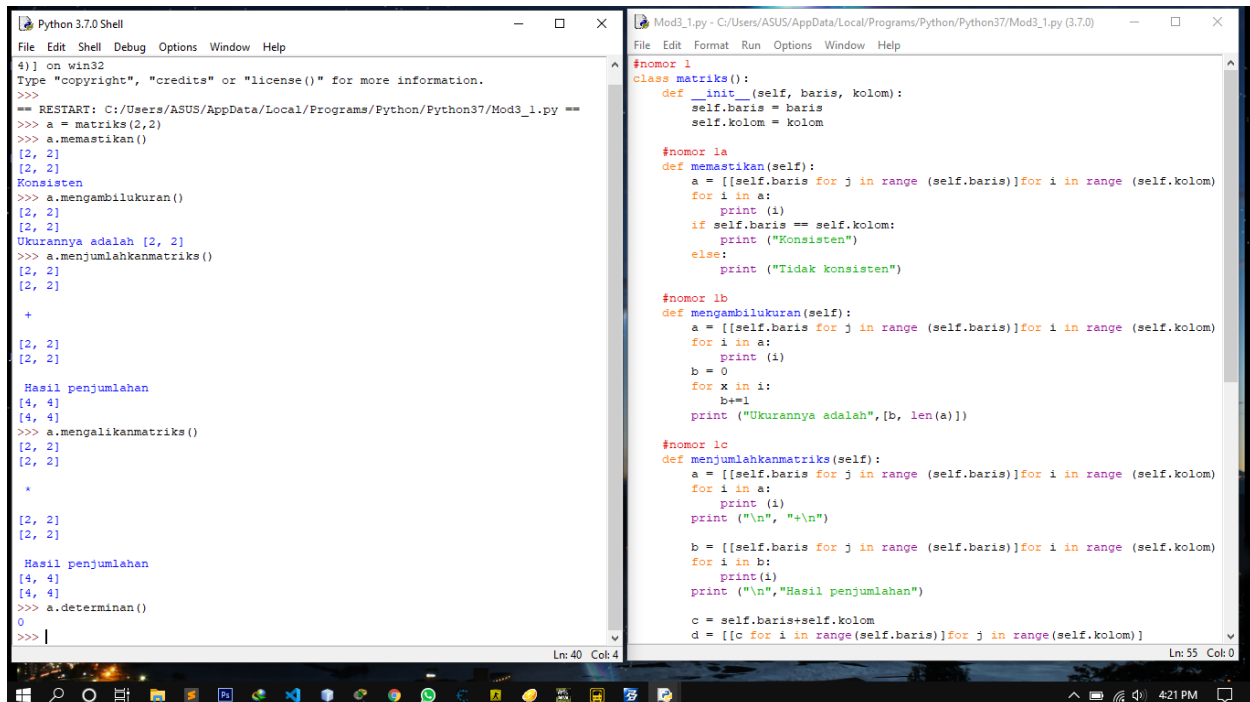
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NIM : L200180082

Kelas : C

Tugas Modul 3

1.



The screenshot shows two windows. The left window is a Python 3.7.0 Shell with the following code and output:

```
4) on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_1.py ==
>>> a = matriks(2,2)
>>> a.memastikan()
[2, 2]
[2, 2]
Konsisten
>>> a.mengambilukuran()
[2, 2]
[2, 2]
Ukurannya adalah [2, 2]
>>> a menjumlahkanmatriks()
[2, 2]
[2, 2]
+
[2, 2]
[2, 2]
Hasil penjumlahan
[4, 4]
[4, 4]
>>> a.mengalikanmatriks()
[2, 2]
[2, 2]
*
[2, 2]
[2, 2]
Hasil penjumlahan
[4, 4]
[4, 4]
>>> a.determinan()
0
>>>
```

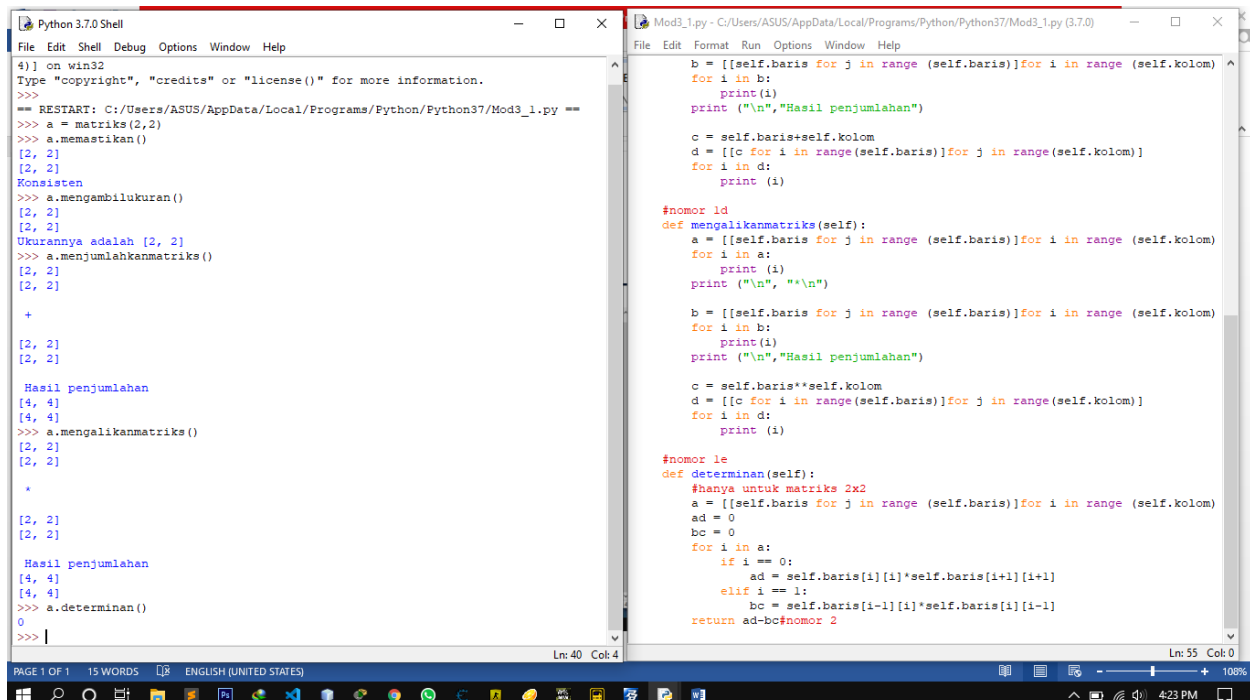
The right window is a code editor showing the implementation of the `matriks` class:

```
#nomor 1
class matriks():
    def __init__(self, baris, kolom):
        self.baris = baris
        self.kolom = kolom

#nomor 1a
def memastikan(self):
    a = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in a:
        print (i)
    if self.baris == self.kolom:
        print ("Konsisten")
    else:
        print ("Tidak konsisten")

#nomor 1b
def mengambilukuran(self):
    a = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in a:
        print (i)
    b = 0
    for x in i:
        b+=1
    print ("Ukurannya adalah",[b, len(a)])

#nomor 1c
def menjumlahkanmatriks(self):
    a = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in a:
        print (i)
        print ("\n", "+\n")
    b = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in b:
        print(i)
        print ("\n","Hasil penjumlahan")
    c = self.baris+self.kolom
    d = [[c for i in range(self.baris)]for j in range(self.kolom)]
```



The screenshot shows two windows. The left window is a Python 3.7.0 Shell with the following code and output:

```
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[2, 2]
[2, 2]
Konsisten
>>> a.mengambilukuran()
[2, 2]
[2, 2]
Ukurannya adalah [2, 2]
>>> a menjumlahkanmatriks()
[2, 2]
[2, 2]
+
[2, 2]
[2, 2]
Hasil penjumlahan
[4, 4]
[4, 4]
>>> a.mengalikanmatriks()
[2, 2]
[2, 2]
*
[2, 2]
[2, 2]
Hasil penjumlahan
[4, 4]
[4, 4]
>>> a.determinan()
0
>>>
```

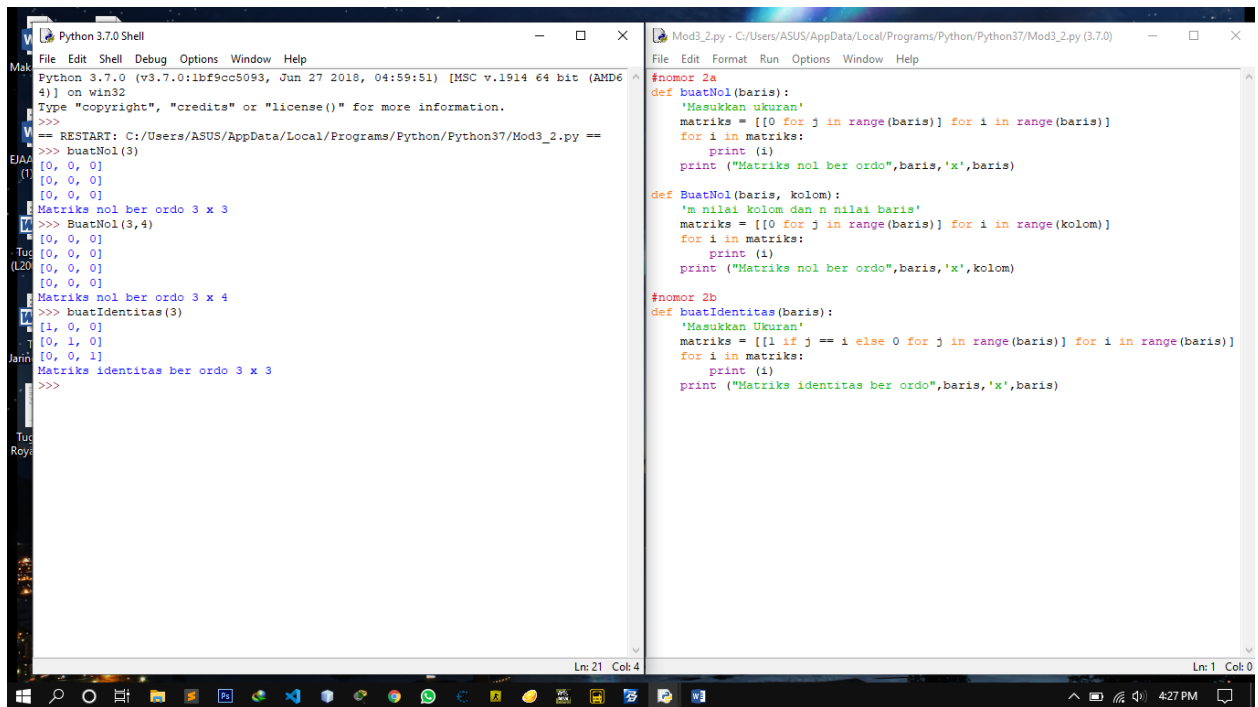
The right window is a code editor showing the continuation of the `matriks` class implementation:

```
c = self.baris+self.kolom
d = [[c for i in range(self.baris)]for j in range(self.kolom)]
for i in d:
    print (i)

#nomor 1d
def mengalikanmatriks(self):
    a = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in a:
        print (i)
        print ("\n", "+\n")
    b = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    for i in b:
        print(i)
        print ("\n","Hasil penjumlahan")
    c = self.baris*self.kolom
    d = [[c for i in range(self.baris)]for j in range(self.kolom)]
    for i in d:
        print (i)

#nomor 1e
def determinan(self):
    #hanya untuk matriks 2x2
    a = [[self.baris for j in range (self.baris)]for i in range (self.kolom)
    ad = 0
    bc = 0
    for i in a:
        if i == 0:
            ad = self.baris[i][i]*self.baris[i+1][i+1]
        elif i == 1:
            bc = self.baris[i-1][i]*self.baris[i][i-1]
    return ad-bc#nomor 2
```

2.



```
Python 3.7.0 Shell
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_2.py ==
>>> buatMatriks(3)
[[0, 0, 0],
 [0, 0, 0],
 [0, 0, 0]]
Matriks nol ber ordo 3 x 3
>>> buatMatriks(3,4)
[[0, 0, 0, 0],
 [0, 0, 0, 0],
 [0, 0, 0, 0]]
Matriks nol ber ordo 3 x 4
>>> buatIdentitas(3)
[[1, 0, 0],
 [0, 1, 0],
 [0, 0, 1]]
Matriks identitas ber ordo 3 x 3
>>>
```

```
Mod3_2.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_2.py (3.7.0)
File Edit Format Run Options Window Help

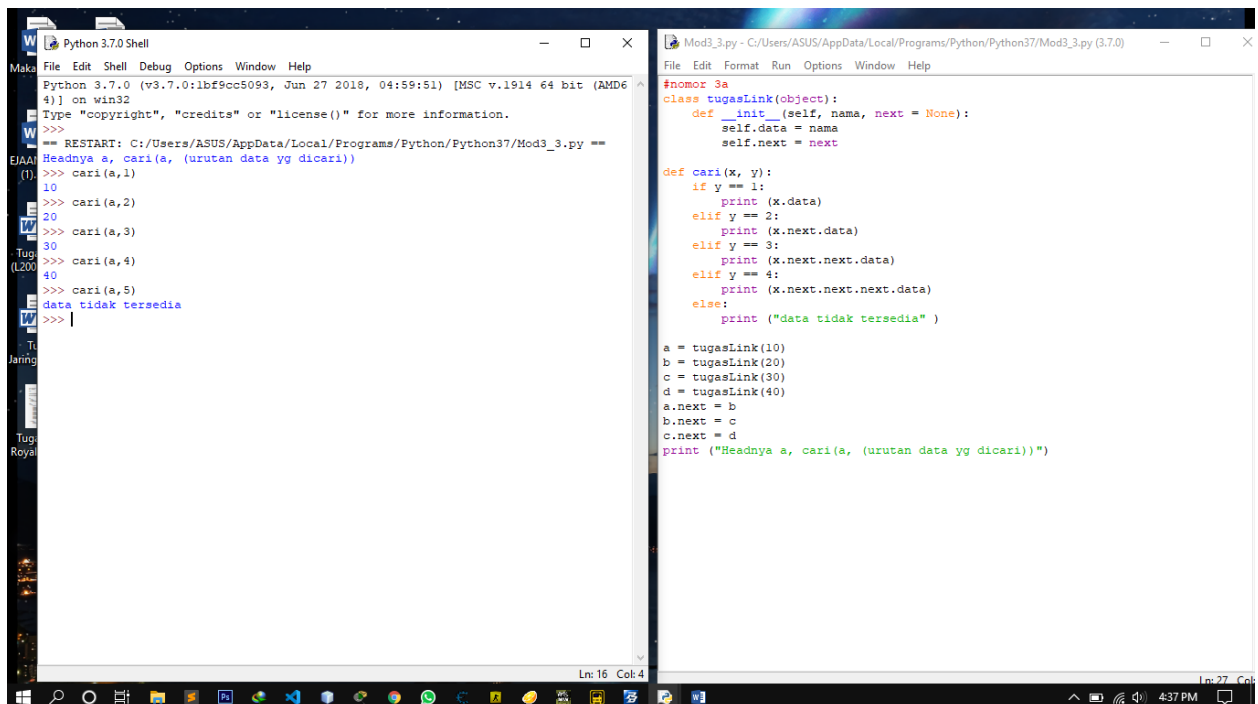
#nomor 2a
def buatMatriks(baris):
    'Masukkan ukuran'
    matriks = [[0 for j in range(baris)] for i in range(baris)]
    for i in matriks:
        print(i)
    print ("Matriks nol ber ordo",baris,'x',baris)

def BuatMatriks(baris, kolom):
    'm nilai kolom dan n nilai baris'
    matriks = [[0 for j in range(baris)] for i in range(kolom)]
    for i in matriks:
        print(i)
    print ("Matriks nol ber ordo",baris,'x',kolom)

#nomor 2b
def buatIdentitas(baris):
    'Masukkan Ukuran'
    matriks = [[1 if j == i else 0 for j in range(baris)] for i in range(baris)]
    for i in matriks:
        print(i)
    print ("Matriks identitas ber ordo",baris,'x',baris)
```

3.

a.



```
Python 3.7.0 Shell
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3.py ==
>>> Headnya a, cari(a, (urutan data yg dicari))
10
>>> cari(a,2)
20
>>> cari(a,3)
30
>>> cari(a,4)
40
>>> cari(a,5)
data tidak tersedia
>>>
```

```
Mod3_3.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3.py (3.7.0)
File Edit Format Run Options Window Help

#nomor 3a
class tugasLink(object):
    def __init__(self, nama, next = None):
        self.data = nama
        self.next = next

def cari(x, y):
    if y == 1:
        print(x.data)
    elif y == 2:
        print(x.next.data)
    elif y == 3:
        print(x.next.next.data)
    elif y == 4:
        print(x.next.next.next.data)
    else:
        print ("data tidak tersedia")

a = tugasLink(10)
b = tugasLink(20)
c = tugasLink(30)
d = tugasLink(40)
a.next = b
b.next = c
c.next = d
print ("Headnya a, cari(a, (urutan data yg dicari))")
```

b.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3b.py ==
>>> tambahDepan(1)
Simpul Awal
1
2
3
4
5
Simpul setelah ditambah
1
2
3
4
5
>>> |

Mod3_3b.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3b.py (3.7.0)
File Edit Format Run Options Window Help
#nomor 3b
class tgsLink2(object):
    def __init__(self, nama, next = None):
        self.data = nama
        self.next = next
    def tambahDepan(x):
        print ("Simpul Awal")
        print (a.data)
        print (a.next.data)
        print (a.next.next.data)
        print (a.next.next.next.data)
        L = tgsLink2(x)
        L.next = a
        w = a
        print ("Simpul setelah ditambah")
        print (L.data)
        print (L.next.data)
        print (L.next.next.data)
        print (L.next.next.next.data)
        print (L.next.next.next.next.data)

a = tgsLink2(2)
b = tgsLink2(3)
c = tgsLink2(4)
d = tgsLink2(5)
a.next = b
b.next = c
c.next = d
```

C.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3c.py ==
>>> tambahAkhir(16)
Simpul Awal
12
13
14
15
Nilai setelah di tambah
12
13
14
15
16
>>> |

Mod3_3c.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3c.py (3.7.0)
File Edit Format Run Options Window Help
#nomor 3c
class tgsLink3(object):
    def __init__(self, nama, next = None):
        self.data = nama
        self.next = next
    def tambahAkhir(x):
        a = tgsLink3(12)
        b = tgsLink3(13)
        c = tgsLink3(14)
        d = tgsLink3(15)
        a.next = b
        b.next = c
        c.next = d
        print ("Simpul Awal")
        print (a.data)
        print (a.next.data)
        print (a.next.next.data)
        print (a.next.next.next.data)

a = tgsLink3(12)
b = tgsLink3(13)
c = tgsLink3(14)
d = tgsLink3(15)
L = tgsLink3(x)
a.next = b
b.next = c
c.next = d
d.next = L
print ("Nilai setelah di tambah")
print (a.data)
print (a.next.data)
print (a.next.next.data)
print (a.next.next.next.data)
print (a.next.next.next.next.data)
```

d.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3d.py ==
Simpul Awal
5
6
7
8
>>> tambah(7,"awal")
>>> |

Mod3_3d.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3d.py (3.7.0)
File Edit Format Run Options Window Help
#nomor 3d
class tgsLink4(object):
    def __init__(self, nama, next = None):
        self.data = nama
        self.next = next
a = tgsLink4(5)
b = tgsLink4(6)
c = tgsLink4(7)
d = tgsLink4(8)
a.next = b
b.next = c
c.next = d
print ("Simpul Awal")
print (a.data)
print (a.next.data)
print (a.next.next.data)
print (a.next.next.next.data)
def tambah(head, posisi):
    a = tgsLink4(5)
    b = tgsLink4(6)
    c = tgsLink4(7)
    d = tgsLink4(8)
    L = tgsLink4(head)
    if posisi == "awal":
        L.next = a
        a.next = b
        b.next = c
        c.next = d
        print (L.data)
        print (L.next.data)
        print (L.next.next.data)
        print (L.next.next.next.data)
        print (L.next.next.next.next.data)
```

e.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3e.py ==
Simpul Awal
5
6
7
8
>>> hapus("awal")
6
7
8
>>> hapus("tengah")
5
6
7
8
>>> hapus("akhir")
5
6
7
>>> |

Mod3_3e.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_3e.py (3.7.0)
File Edit Format Run Options Window Help
#nomor 3e
class tgsLink4(object):
    def __init__(self, nama, next = None):
        self.data = nama
        self.next = next
a = tgsLink4(5)
b = tgsLink4(6)
c = tgsLink4(7)
d = tgsLink4(8)
a.next = b
b.next = c
c.next = d
print ("Simpul Awal")
print (a.data)
print (a.next.data)
print (a.next.next.data)
print (a.next.next.next.data)
def hapus(posisi):
    q = str(posisi)
    a = tgsLink4(5)
    b = tgsLink4(6)
    c = tgsLink4(7)
    d = tgsLink4(8)
    if q == "awal":
        b.next = c
        c.next = d
        print (b.data)
        print (b.next.data)
        print (b.next.next.data)
    elif q == "tengah":
        a.next = c
        print (a.data)
        print (a.next.data)
        print (a.next.next.data)
    elif q == "akhir":
        a.next = b
        b.next = c
        print (a.data)
        print (a.next.data)
        print (a.next.next.data)
```

4.

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_4.py ==
>>> a = Node(11)
>>> b = Node(21)
>>> c = Node(31)
>>> d = Node(41)
>>> a.cetakDepan(a)
11
21
31
41
>>> b.cetakBelakang(b)
41
31
21
11
>>>

Mod3_4.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_4.py (3.7.0)
File Edit Format Run Options Window Help
#nomor 4a
class Node():
    def __init__(self, data, next = None):
        self.data = data
        self.next = next

    def cetakDepan(self, data):
        a.next = b
        b.next = c
        c.next = d
        print(a.data)
        print(a.next.data)
        print(a.next.next.data)
        print(a.next.next.next.data)

    def cetakBelakang(self, data):
        d.prev = c
        c.prev = b
        b.prev = a
        print(d.data)
        print(d.prev.data)
        print(d.prev.prev.data)
        print(d.prev.prev.prev.data)

#nomor 4b
def tambahDepan(x):
    a.next = b
    b.next = c
    c.next = d
    L = Linked(x)
    L.next = a
    print("Setelah ditambah")
    print(L.data)
    print(L.next.data)
    print(L.next.next.data)
    print(L.next.next.next.data)
    print(L.next.next.next.next.data)

Ln: 6 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, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_4bc.py ==
>>> f
>>> awal
>>> akhir
>>>

Mod3_4bc.py - C:/Users/ASUS/AppData/Local/Programs/Python/Python37/Mod3_4bc.py (3.7.0)
File Edit Format Run Options Window Help
class DNode(object):
    def __init__(self, data):
        self.data = data
        self.next = None
        self.prev = None

    def massDNodeCreator(list):
        a = DNode(list[0])
        p = a
        for i in list[1:]:
            p.next = DNode(i)
            p.next.prev = p
            p = p.next
        return a

    def tambahSimpulAwal(head, data):
        data = DNode(data)
        data.next = head
        data.next.prev = data
        return data

    def tambahSimpulAkhir(head, data):
        data = DNode(data)
        temp = head
        while temp.next != None:
            temp = temp.next
        temp.next = data
        return head

list = ["a", "g", "g", "h"]
a = massDNodeCreator(list)
print(a.next.next.next.prev.prev.data)

a = tambahSimpulAwal(a, "awal")
print(a.next.prev.data)

a = tambahSimpulAkhir(a, "akhir")
print(a.next.next.next.next.next.data)

Ln: 8 Col: 4
```