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MODUL 3

1. Array dua dimensi

```
1.py - C:/Users/ACER/Documents/COOLYAH/SEMESTER 4/PRAKTIKUM ASD/MODUL - 03/1.py (3.4.3)
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a = [[1,2],[3,4]]
b = [[5,6],[7,8]]
c = [[12,3,"x","y"],[12,33,4]]
d = [[3,4],[2,4],[1,5]]
e = [[5,6,7],[7,8,9]]
f = [[1,2,3],[4,5,6],[7,8,9]]

def cekKonsisten(n):
    x = len(n[0])
    z = 0
    for i in range(len(n)):
        if (len(n[i]) == x):
            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):
```

```
Python 3.4.3 Shell
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Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
matriks konsisten
matriks konsisten
matrik tidak konsisten
semua isi matriks adalah angka
semua isi matriks adalah angka
tidak semua isi matriks adalah angka
mempunyai ordo 2x2
mempunyai ordo 2x2
mempunyai ordo 3x2
mempunyai ordo 2x3
ukuran sama
[[6, 8], [10, 12]]
ukuran beda
bisa dikalikan
[[14], [14]]
bisa dikalikan
[[19, 22], [43, 50]]
bisa dikalikan
[[19, 22, 25], [43, 50, 57]]
tidak memenuhi syarat
13
-6
200
330
tidak bisa dihitung determinan, bukan matriks bujursangkar
tidak bisa dihitung determinan, bukan matriks bujursangkar
>>> |
```

2. List comprehension

```
2.py - C:/Users/ACER/Documents/COOLYAH/SEMESTER 4/PRAKTIKUM ASD/MODUL - 03/2.py (3.4.3)
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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)
|
```

```
Python 3.4.3 Shell
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Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
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]]
membuat matriks identitas dengan ordo 4x4
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
membuat matriks identitas dengan ordo 2x2
[[1, 0], [0, 1]]
>>> |
```

3. Linked list

```
3.py - C:/Users/ACER/Documents/COOLYAH/SEMESTER 4/PRAKTIKUM ASD/MODUL - 03/3.py (3.4.3)
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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:
            return
        return
```

```
Python 3.4.3 Shell
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Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
True
False
2 14 12 22 21 1 9
>>> |
```

4. Doubly linked list

```
4.py - C:/Users/ACER/Documents/COOLYAH/SEMESTER 4/PRAKTIKUM ASD/MODUL - 03/4.py (3.4.3)
File Edit Format Run Options Window Help

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
l1 = DoublyLinkedList()
l1.awal(7)
l1.akhir(1)
l1.akhir(6)
l1.akhir(4)
```

```
Python 3.4.3 Shell
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Python 3.4.3 (v3.4.3:9b73f1c3e601, Feb 24 2015, 22:43:06) [MSC v.1600 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> ===== RESTART =====
>>>
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
>>>
```