Nama : Alvian Harisnur

NIM : L200170132

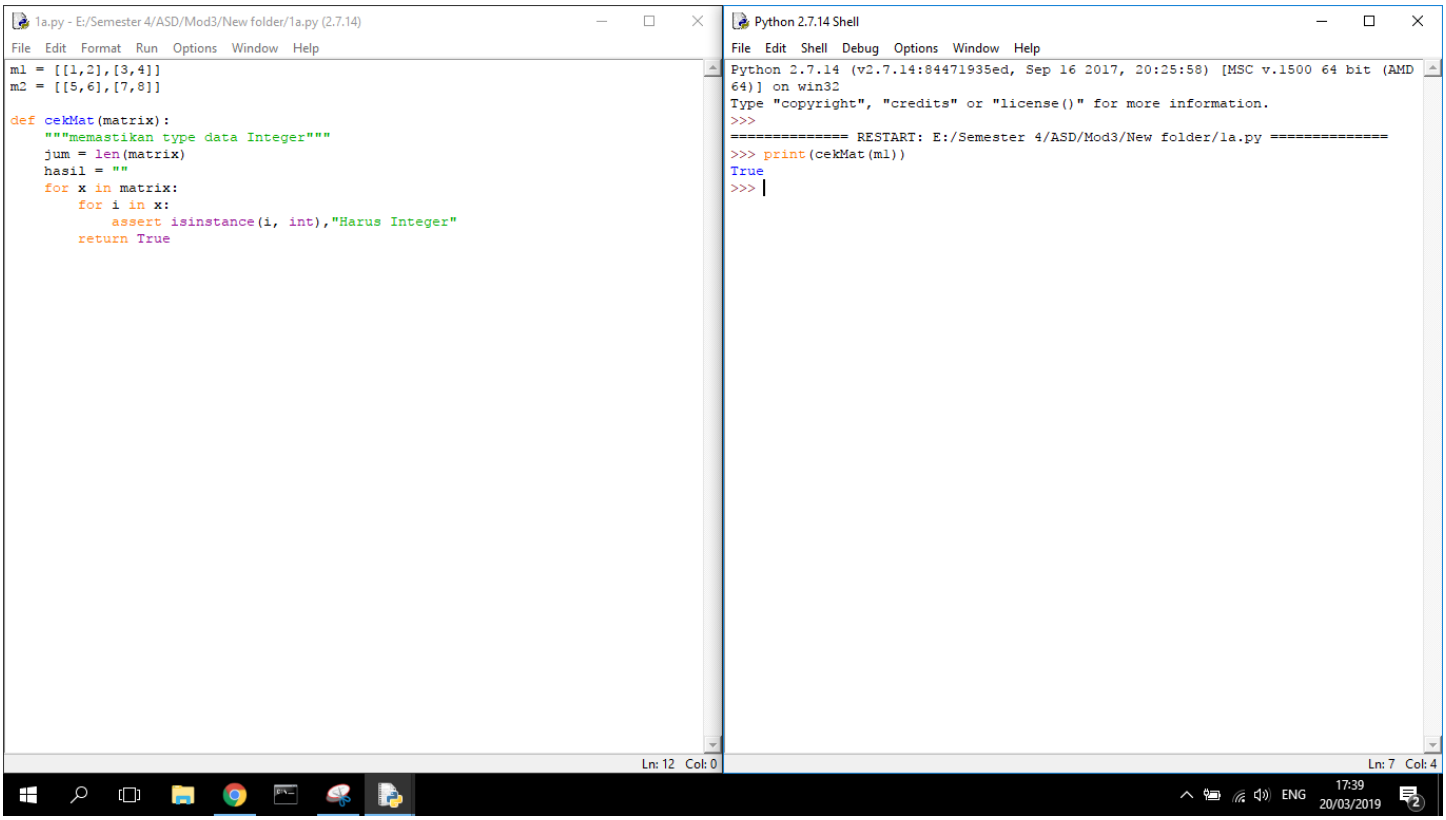
Kelas : D

Modul 3

Collections, Arrays, and Linked Structures

Soal - Soal untuk Mahasiswa

1. a



1. b

1b.py - E:/Semester 4/ASD/Mod3/New folder/1b.py (2.7.14)

File Edit Format Run Options Window Help

```
m1 = [[1,2],[3,4]]
m2 = [[5,6],[7,8]]

def Ukuran(matrix):
    """Mengambil ukuran matriks"""
    return("Ukuran Matrix = "+str(len(matrix))+" x "+str(len(matrix[0])))
```

Ln: 8 Col: 0

Python 2.7.14 Shell

File Edit Shell Debug Options Window Help

```
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD
64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============== RESTART: E:/Semester 4/ASD/Mod3/New folder/1b.py ==============
>>> print(Ukuran(m1))
Ukuran Matrix = 2 x 2
>>>
```

Ln: 7 Col: 4

1. c

1c.py - E:/Semester 4/ASD/Mod3/New folder/1c.py (2.7.14)

File Edit Format Run Options Window Help

```
m1 = [[1,2],[3,4]]
m2 = [[5,6],[7,8]]

def Jumlah(matrix1,matrix2):
    """Penjumlahan 2 Matrix"""
    if Ukuran(matrix1) == Ukuran(matrix2):
        for x in range(0, len(matrix1)):
            for y in range(0, len(matrix1[0])):
                print(matrix1[x][y] + matrix2[x][y], end=' '),
            print()
    else:
        print("Matriks Tidak Sesuai")
```

Ln: 13 Col: 0

Python 2.7.14 Shell

File Edit Shell Debug Options Window Help

```
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD
64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============== RESTART: E:/Semester 4/ASD/Mod3/New folder/1c.py ==============
>>> Jumlah(m1,m2)
```

Ln: 5 Col: 1

1. d

1d.py - E:/Semester 4/ASD/Mod3/New folder/1d.py (2.7.14)

File Edit Format Run Options Window Help

```
m1 = [[1,2],[3,4]]
m2 = [[5,6],[7,8]]

def Kali(matrix1,matrix2):
    """Perkalian 2 Matrix"""
    mat3 = []
    if Ukuran(matrix1) == Ukuran(matrix2):
        for x in range(0, len(matrix1)):
            row = []
            for y in range(0, len(matrix1[0])):
                total = 0
                for z in range(0, len(matrix1)):
                    total = total + (matrix1[x][z] * matrix2[z][y])
                row.append(total)
            mat3.append(row)

        for x in range(0, len(mat3)):
            for y in range(0, len(mat3[0])):
                print(mat3[x][y], end==' ')
            print()
    else:
        print("Matriks Tidak Sesuai")
```

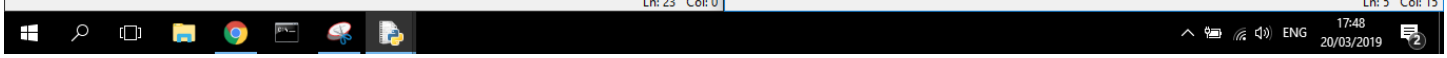
Ln: 23 Col: 0

Python 2.7.14 Shell

File Edit Shell Debug Options Window Help

```
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD
64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============== RESTART: E:/Semester 4/ASD/Mod3/New folder/1d.py ==============
>>> Kali(m1,m2)
```

Ln: 5 Col: 15



1. e

1e.py - E:/Semester 4/ASD/Mod3/New folder/1e.py (2.7.14)

File Edit Format Run Options Window Help

```
m1 = [[1,2],[3,4]]
m2 = [[5,6],[7,8]]

def determinan(matrix):
    """Menghitung Determinan Matrix"""
    if len(matrix) == len(matrix[0]):
        bil = [x for x in range(len(matrix))]
        jum = 0
        for i in range(len(matrix)):
            total = 1
            for x in range(len(matrix)):
                total *= matrix[bil[x]]
            bil += [bil.pop(0)]
            jum += total
        bil2 = [x for x in range(len(matrix))]
        bil.reverse()
        jum2 = 0
        for i in range(len(matrix)):
            total2 = 1
            for x in range(len(matrix)):
                total2 *= matrix[x][bil2[x]]
            bil2 += [bil2.pop()]
            jum2 += total2
        print(total-total2)
        return ""
    else:
        print("Matriks Harus Bujursangkar")
```

Ln: 11 Col: 0

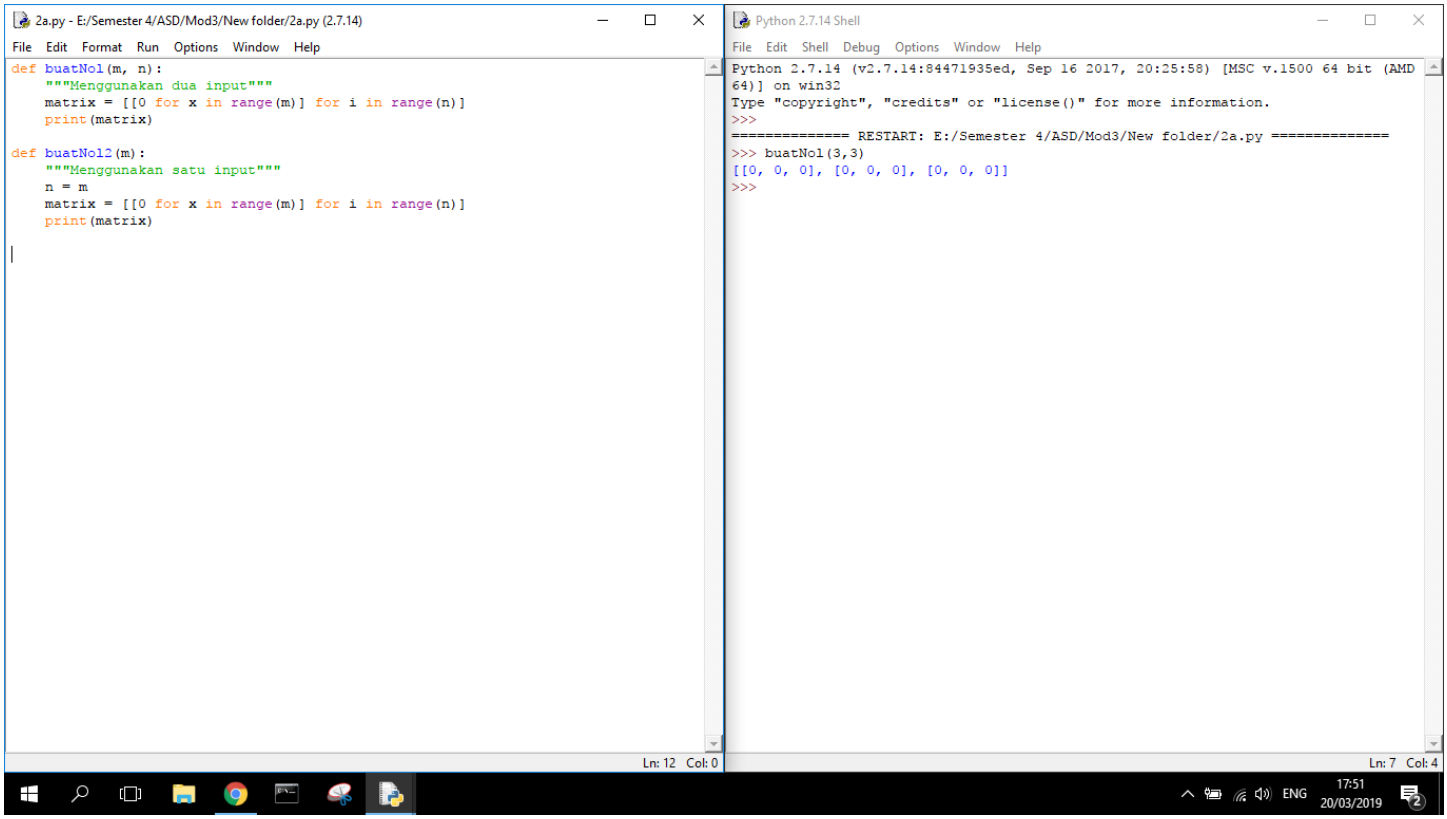
Python 2.7.14 Shell

File Edit Shell Debug Options Window Help

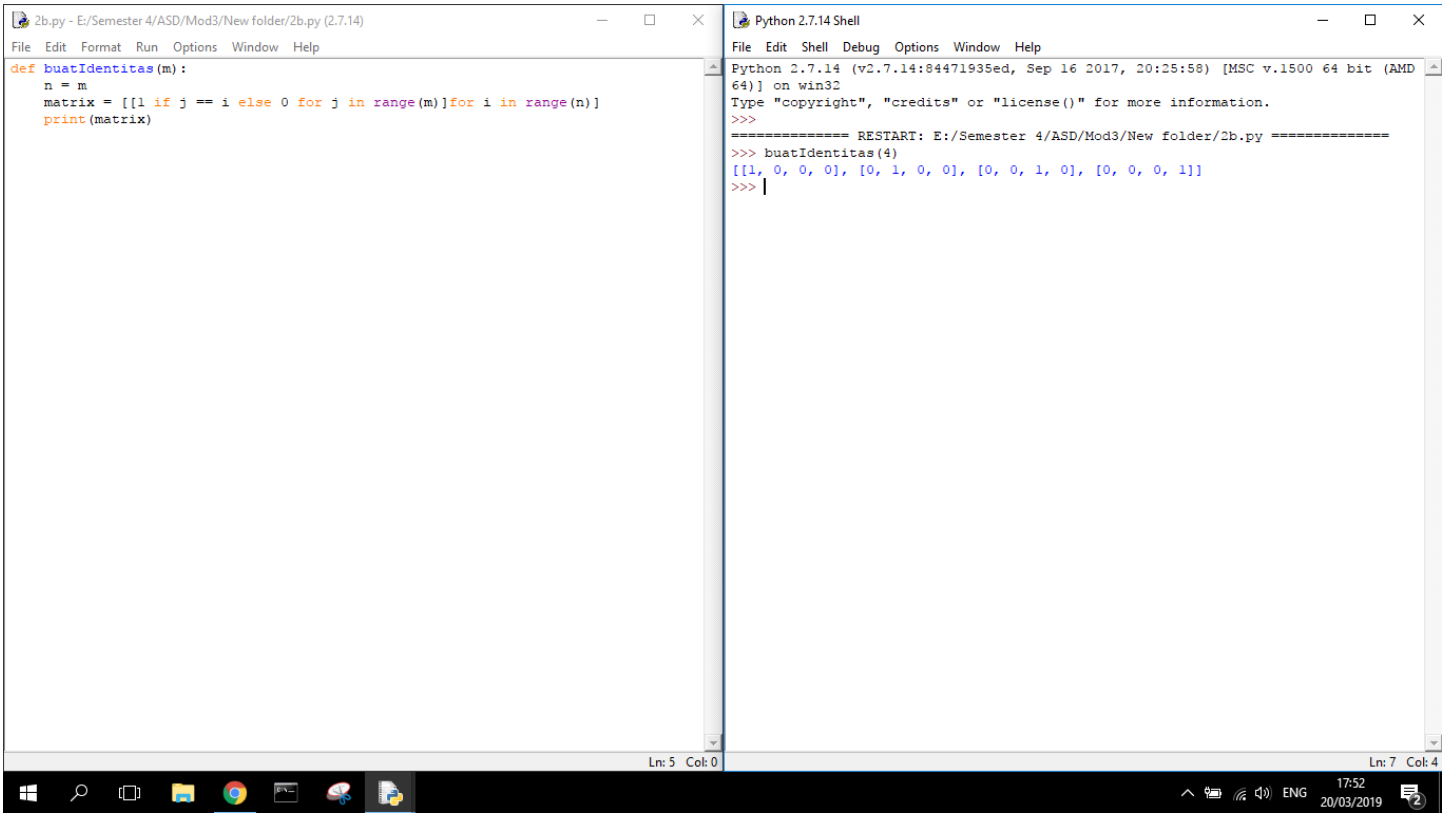
```
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD
64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============== RESTART: E:/Semester 4/ASD/Mod3/New folder/1e.py ==============
>>> print(determinan(m1))
```

Ln: 5 Col: 4

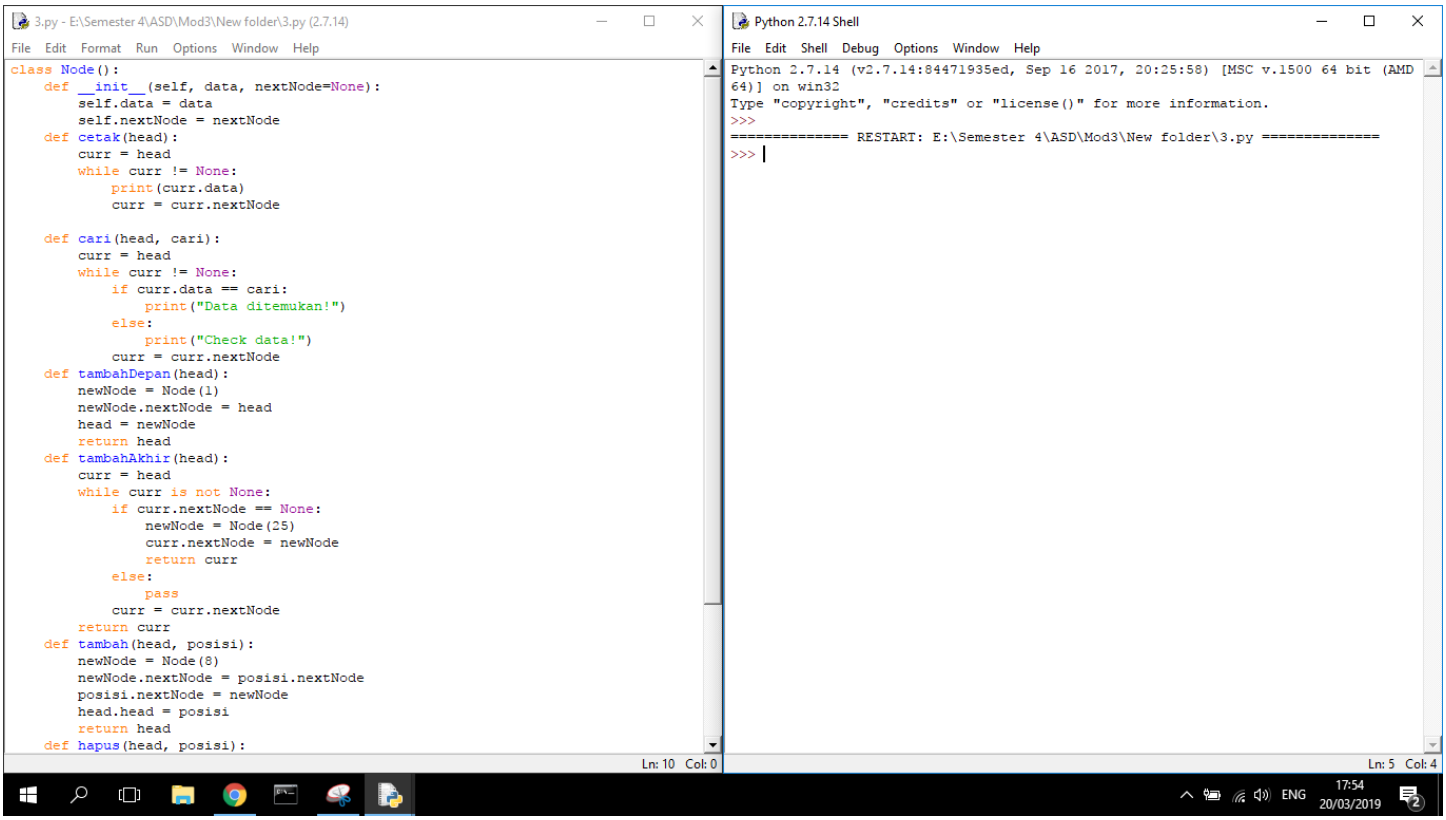
2. a

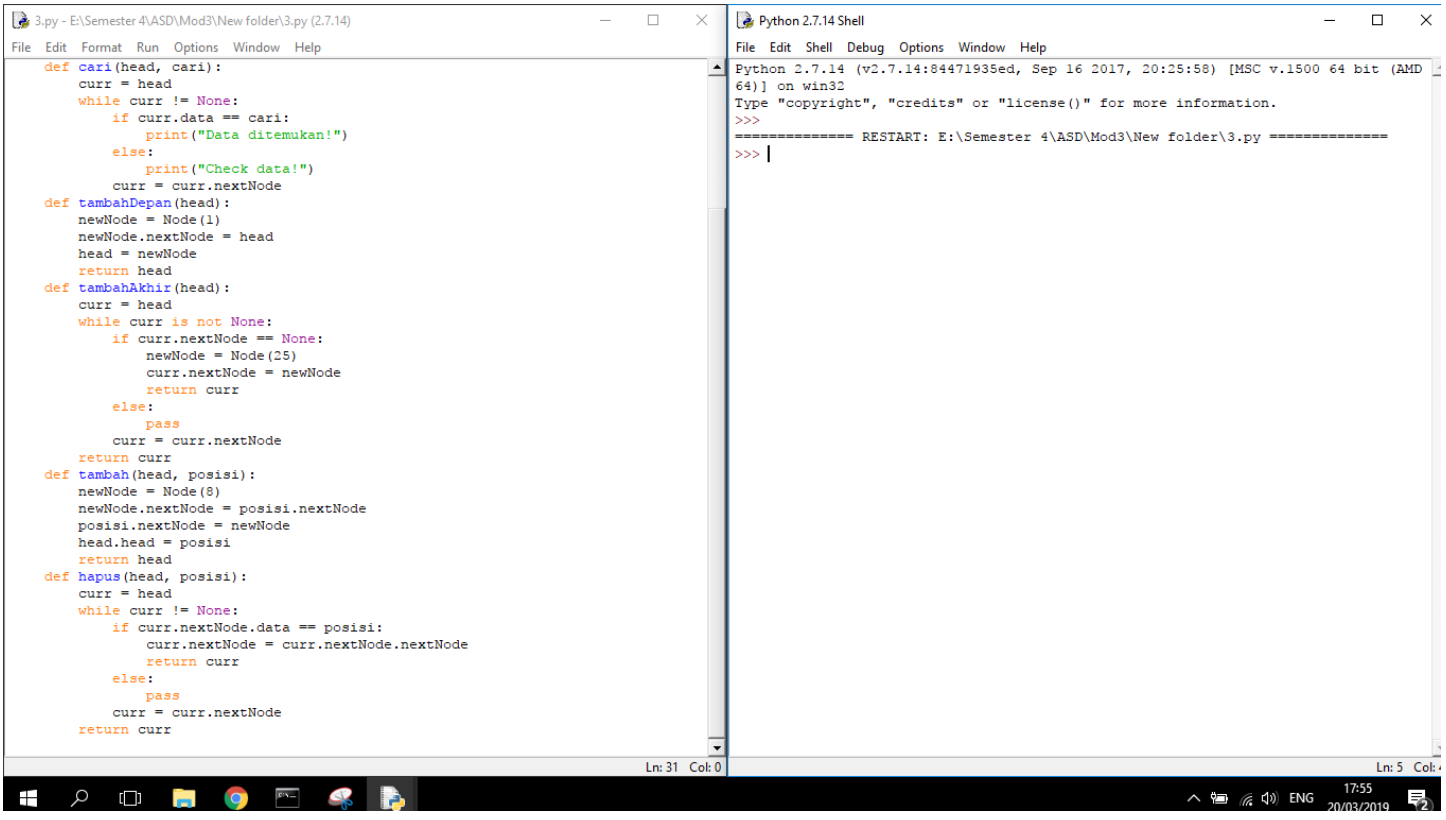

2a.py - E:/Semester 4/ASD/Mod3/New folder/2a.py (2.7.14)
File Edit Format Run Options Window Help
def buatNol(m, n):
"""Menggunakan dua input"""
matrix = [[0 for x in range(m)] for i in range(n)]
print(matrix)
def buatNol2(m):
"""Menggunakan satu input"""
n = m
matrix = [[0 for x in range(m)] for i in range(n)]
print(matrix)
Ln: 12 Col: 0
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/Semester 4/ASD/Mod3/New folder/2a.py ==========
>>> buatNol(3,3)
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>>
Ln: 7 Col: 4
ENG
17:51
20/03/2019

2. b

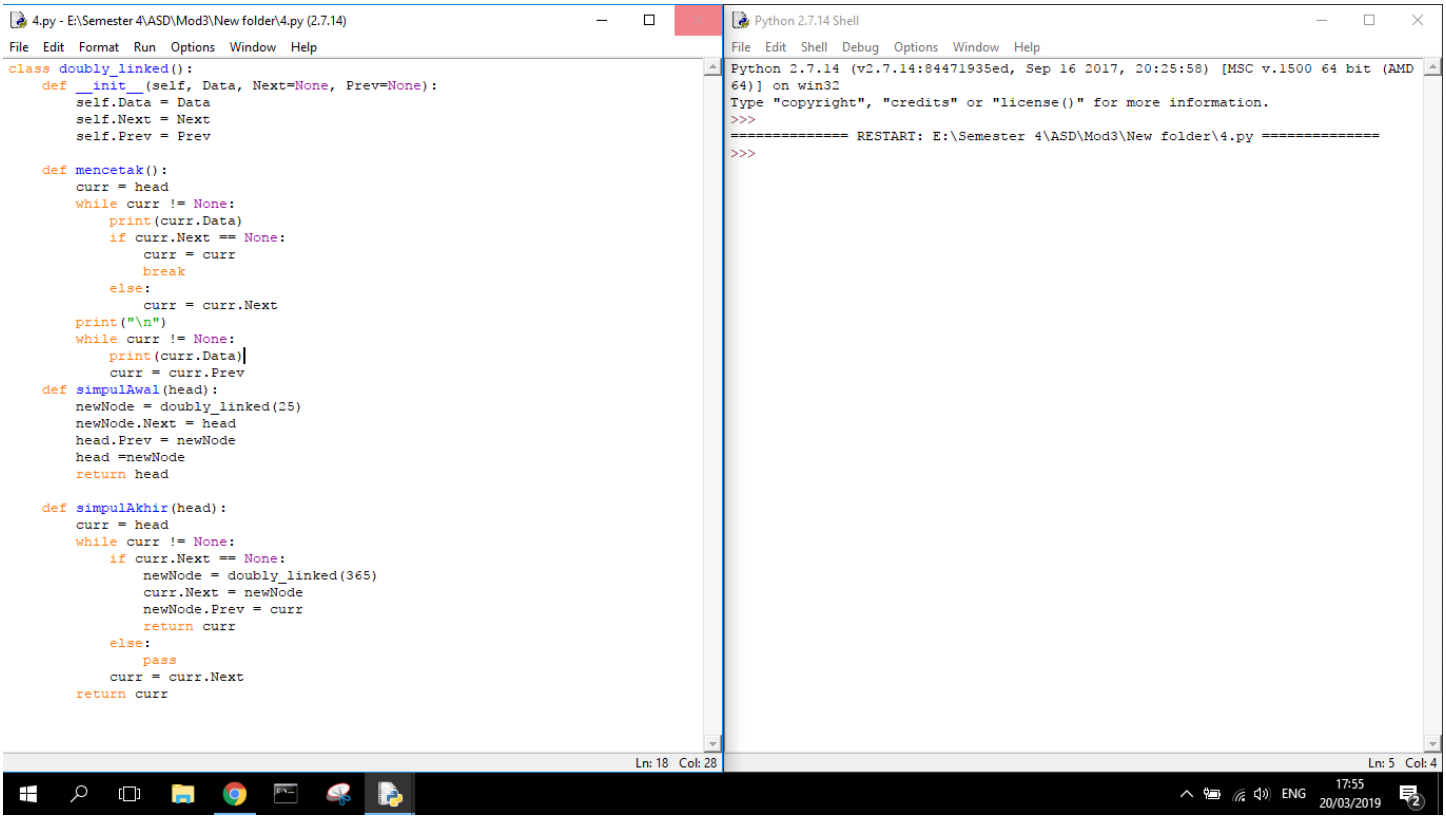

2b.py - E:/Semester 4/ASD/Mod3/New folder/2b.py (2.7.14)
File Edit Format Run Options Window Help
def buatIdentitas(m):
n = m
matrix = [[1 if j == i else 0 for j in range(m)]for i in range(n)]
print(matrix)
Ln: 5 Col: 0
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:/Semester 4/ASD/Mod3/New folder/2b.py ==========
>>> buatIdentitas(4)
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]
>>>
Ln: 7 Col: 4
ENG
17:52
20/03/2019

3.


3.py - E:\Semester 4\ASD\Mod3\New folder\3.py (2.7.14)
File Edit Format Run Options Window Help
class Node():
def __init__(self, data, nextNode=None):
self.data = data
self.nextNode = nextNode
def cetak(head):
curr = head
while curr != None:
print(curr.data)
curr = curr.nextNode
def cari(head, cari):
curr = head
while curr != None:
if curr.data == cari:
print("Data ditemukan!")
else:
print("Check data!")
curr = curr.nextNode
def tambahDepan(head):
newNode = Node(1)
newNode.nextNode = head
head = newNode
return head
def tambahAkhir(head):
curr = head
while curr is not None:
if curr.nextNode == None:
newNode = Node(25)
curr.nextNode = newNode
return curr
else:
pass
curr = curr.nextNode
return curr
def tambah(head, posisi):
newNode = Node(8)
newNode.nextNode = posisi.nextNode
posisi.nextNode = newNode
head.head = posisi
return head
def hapus(head, posisi):
Ln: 10 Col: 0
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:\Semester 4\ASD\Mod3\New folder\3.py ==========
>>>
Ln: 5 Col: 4
ENG
17:54
20/03/2019


3.py - E:\Semester 4\ASD\Mod3\New folder\3.py (2.7.14)
File Edit Format Run Options Window Help
def cari(head, cari):
curr = head
while curr != None:
if curr.data == cari:
print("Data ditemukan!")
else:
print("Check data!")
curr = curr.nextNode
def tambahDepan(head):
newNode = Node(1)
newNode.nextNode = head
head = newNode
return head
def tambahAkhir(head):
curr = head
while curr is not None:
if curr.nextNode == None:
newNode = Node(25)
curr.nextNode = newNode
return curr
else:
pass
curr = curr.nextNode
return curr
def tambah(head, posisi):
newNode = Node(8)
newNode.nextNode = posisi.nextNode
posisi.nextNode = newNode
head.head = posisi
return head
def hapus(head, posisi):
curr = head
while curr != None:
if curr.nextNode.data == posisi:
curr.nextNode = curr.nextNode.nextNode
return curr
else:
pass
curr = curr.nextNode
return curr
Ln: 31 Col: 0
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:\Semester 4\ASD\Mod3\New folder\3.py ==========
>>>
Ln: 5 Col:
ENG
17:55
20/03/2019

4.


4.py - E:\Semester 4\ASD\Mod3\New folder\4.py (2.7.14)
File Edit Format Run Options Window Help
class doubly_linked():
def __init__(self, Data, Next=None, Prev=None):
self.Data = Data
self.Next = Next
self.Prev = Prev
def mencetak():
curr = head
while curr != None:
print(curr.Data)
if curr.Next == None:
curr = curr
break
else:
curr = curr.Next
print("\n")
while curr != None:
print(curr.Data)
curr = curr.Prev
def simpulAwal(head):
newNode = doubly_linked(25)
newNode.Next = head
head.Prev = newNode
head =newNode
return head
def simpulAkhir(head):
curr = head
while curr != None:
if curr.Next == None:
newNode = doubly_linked(365)
curr.Next = newNode
newNode.Prev = curr
return curr
else:
pass
curr = curr.Next
return curr
Ln: 18 Col: 28
Python 2.7.14 Shell
File Edit Shell Debug Options Window Help
Python 2.7.14 (v2.7.14:84471935ed, Sep 16 2017, 20:25:58) [MSC v.1500 64 bit (AMD 64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: E:\Semester 4\ASD\Mod3\New folder\4.py ==========
>>>
Ln: 5 Col: 4
ENG
17:55
20/03/2019