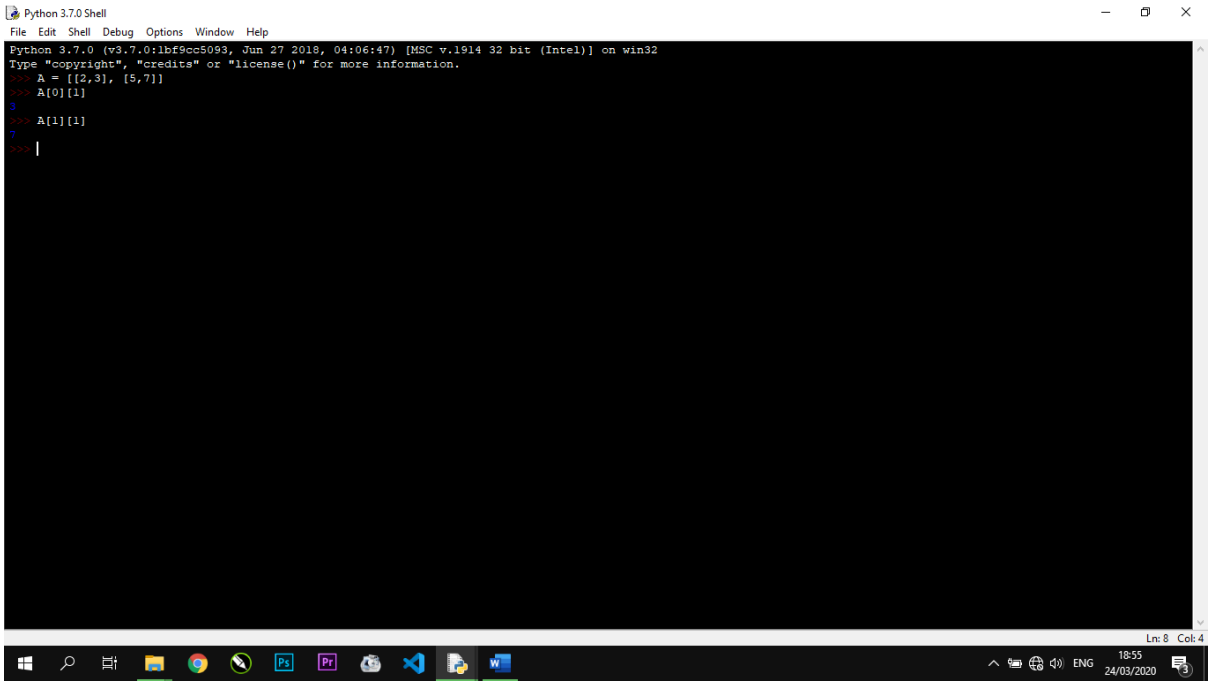
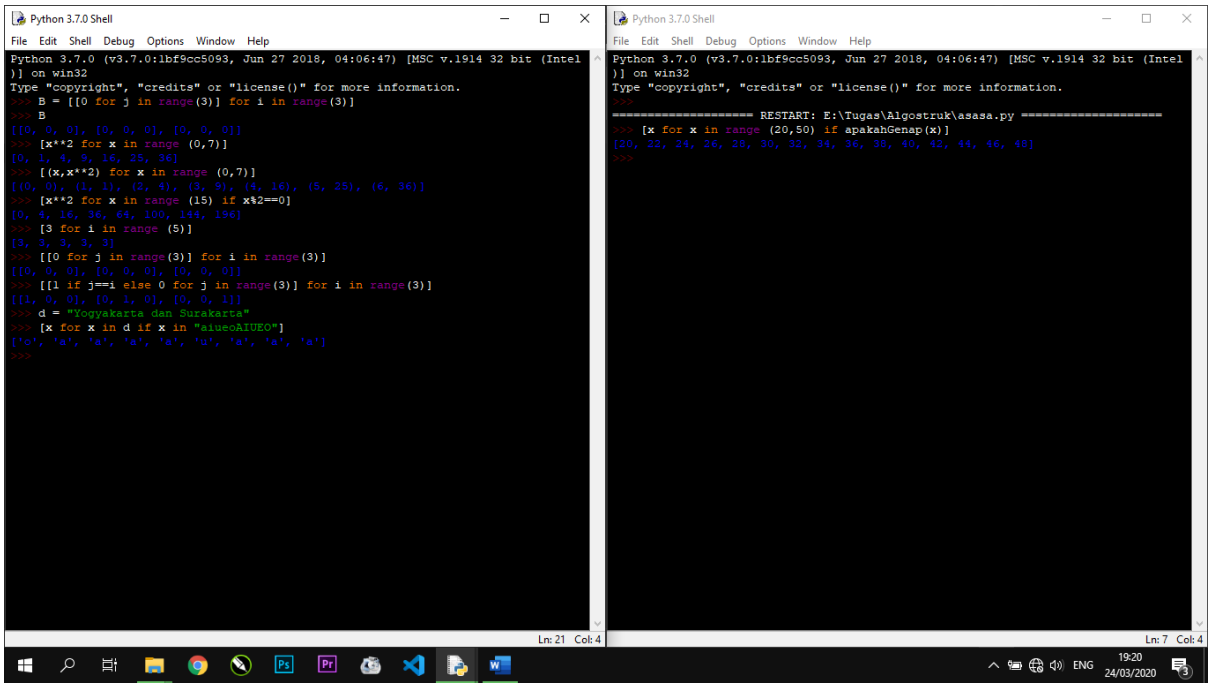
Nama : Wahyu Setyaji Rama Dwijaya
NIM : L200180065
Kelas : C

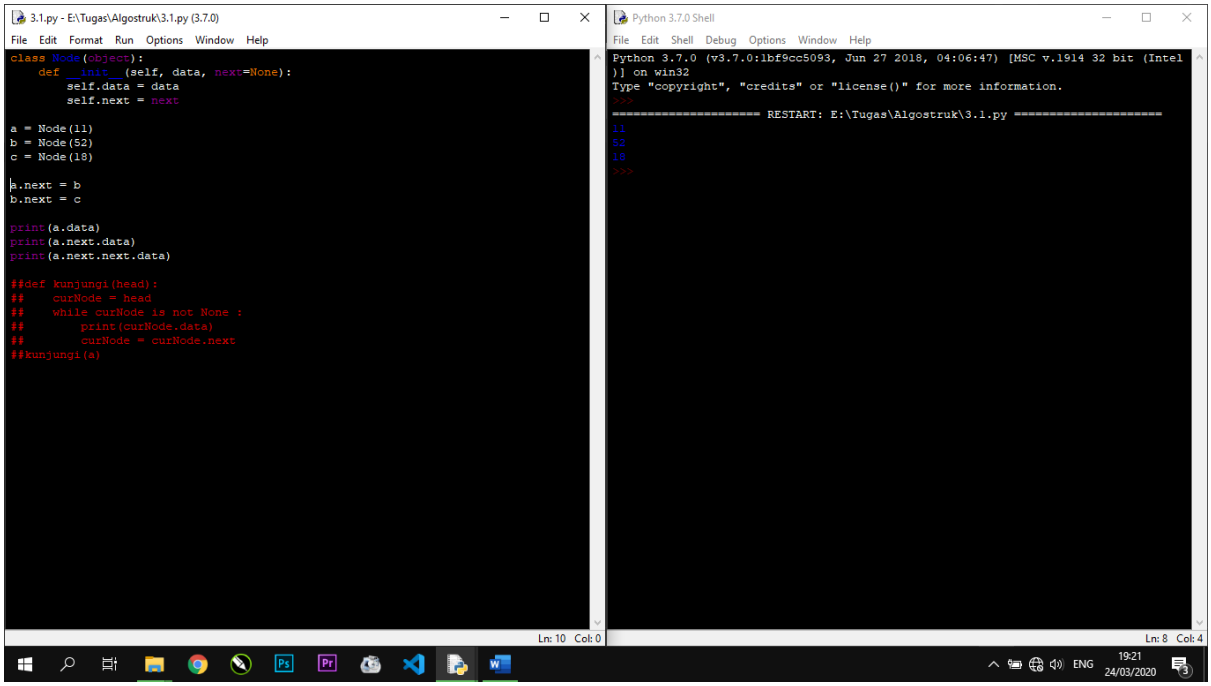
MODUL 3

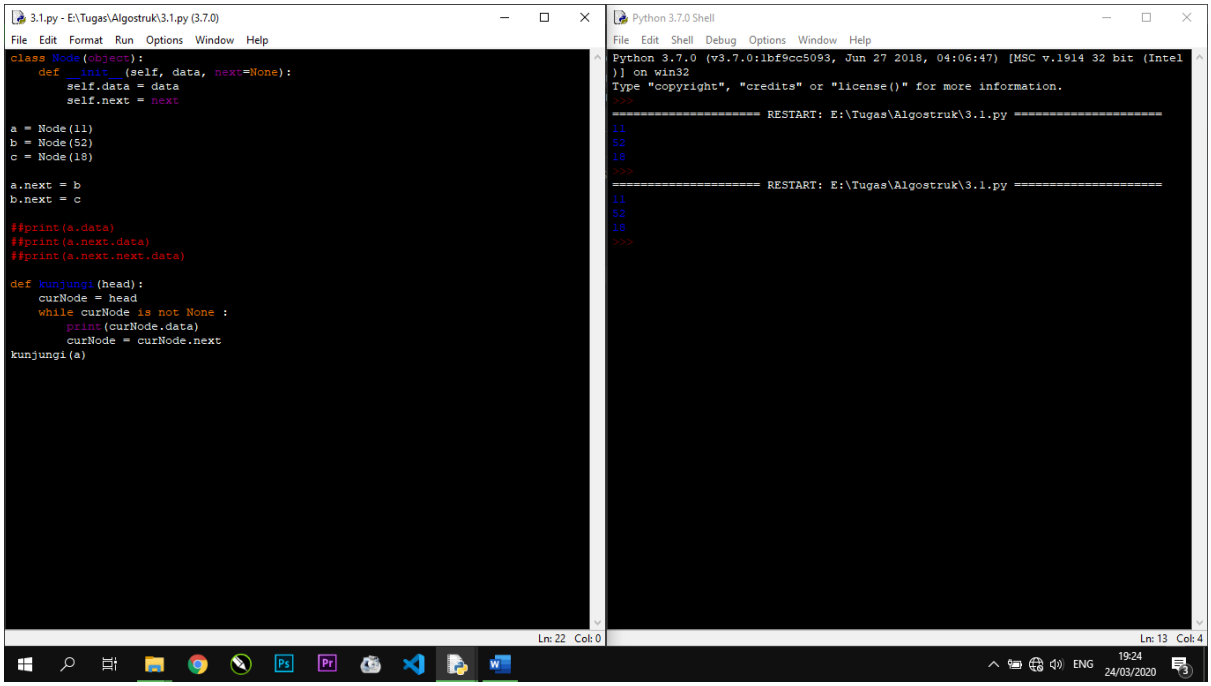
Latihan 3.1



Latihan 3.2

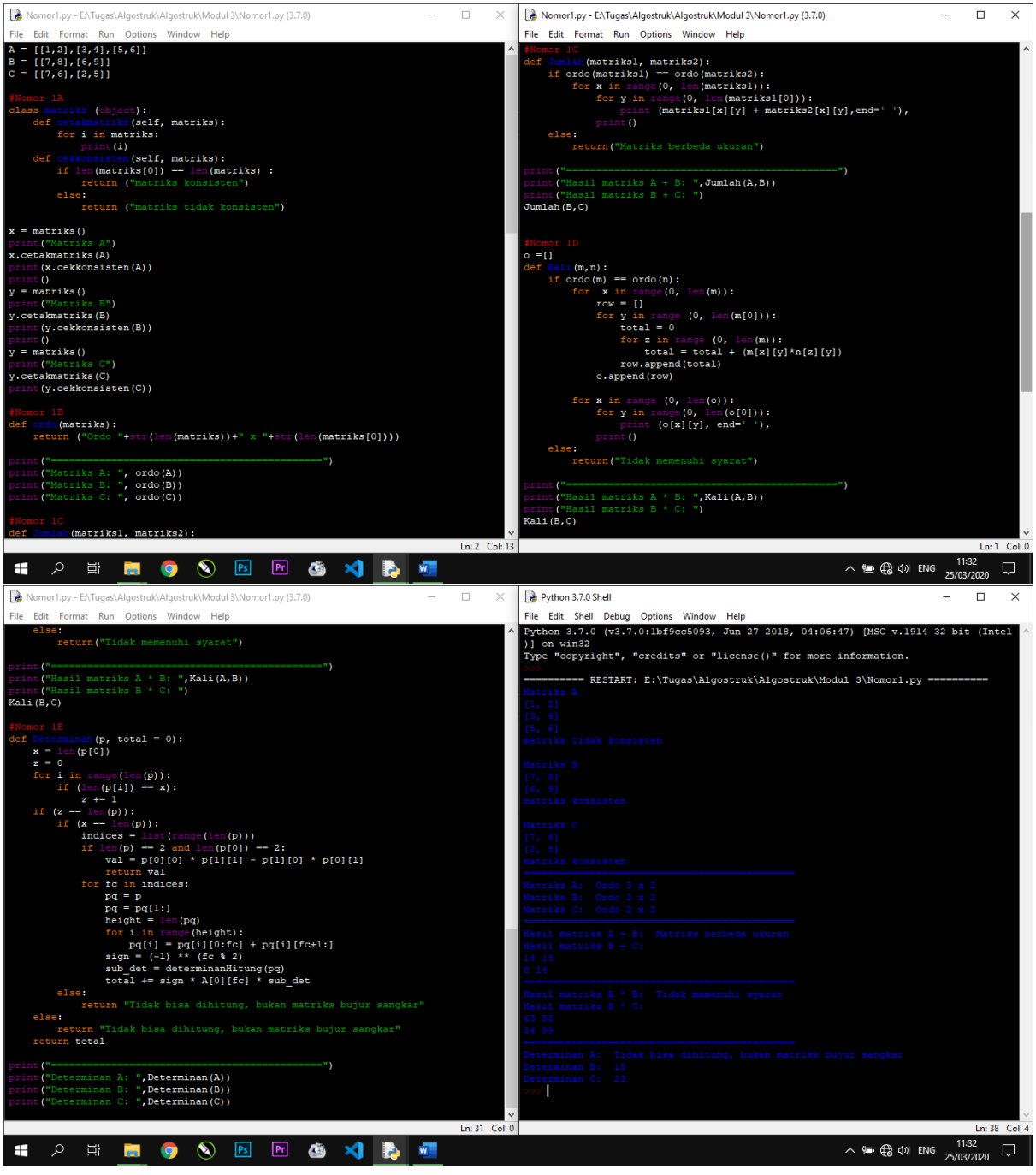



3.1.py - E:\Tugas\Algostruk\3.1.py (3.7.0)
File Edit Format Run Options Window Help
class Node(object):
def __init__(self, data, next=None):
self.data = data
self.next = next
a = Node(11)
b = Node(52)
c = Node(18)
a.next = b
b.next = c
print(a.data)
print(a.next.data)
print(a.next.next.data)
##def kunjungi(head):
##curNode = head
##while curNode is not None :
##print(curNode.data)
##curNode = curNode.next
##kunjungi(a)
Ln: 10 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: E:\Tugas\Algostruk\3.1.py ==========
11
52
18
>>>
Ln: 8 Col: 4
ENG
19:21
24/03/2020

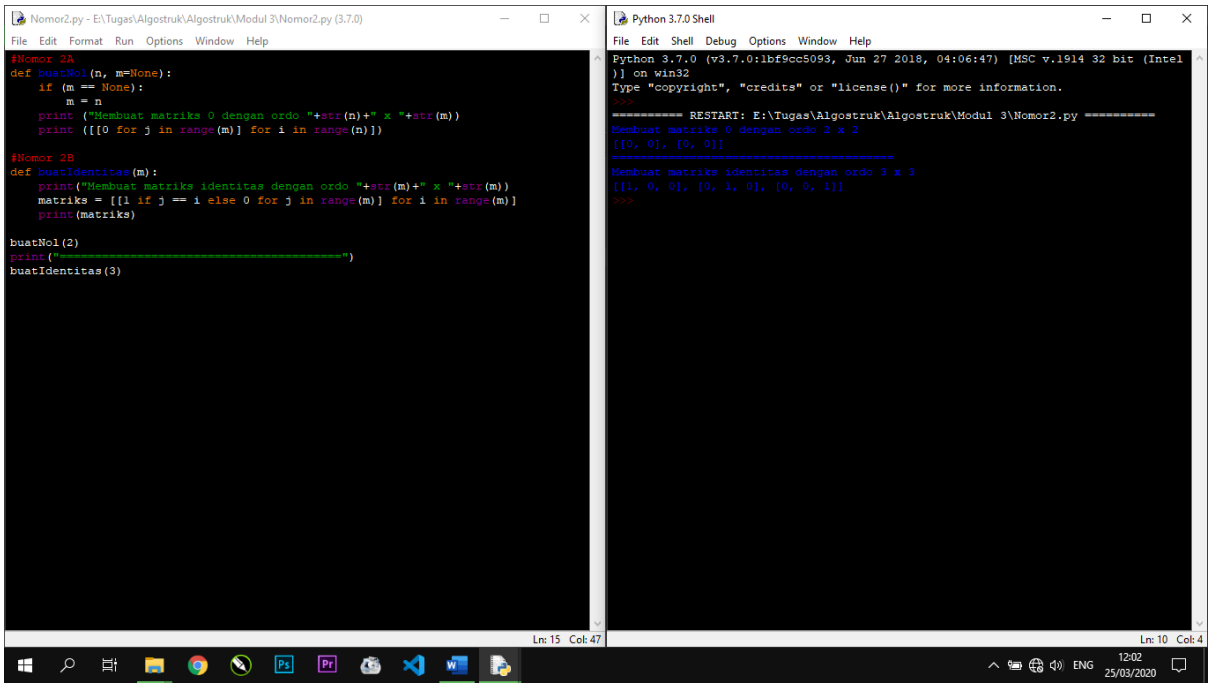

3.1.py - E:\Tugas\Algostruk\3.1.py (3.7.0)
File Edit Format Run Options Window Help
class Node(object):
def __init__(self, data, next=None):
self.data = data
self.next = next
a = Node(11)
b = Node(52)
c = Node(18)
a.next = b
b.next = c
##print(a.data)
##print(a.next.data)
##print(a.next.next.data)
def kunjungi(head):
curNode = head
while curNode is not None :
print(curNode.data)
curNode = curNode.next
kunjungi(a)
Ln: 22 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: E:\Tugas\Algostruk\3.1.py ==========
11
52
18
>>>
========== RESTART: E:\Tugas\Algostruk\3.1.py ==========
11
52
18
>>>
Ln: 13 Col: 4
ENG
19:24
24/03/2020

Soal 3.4

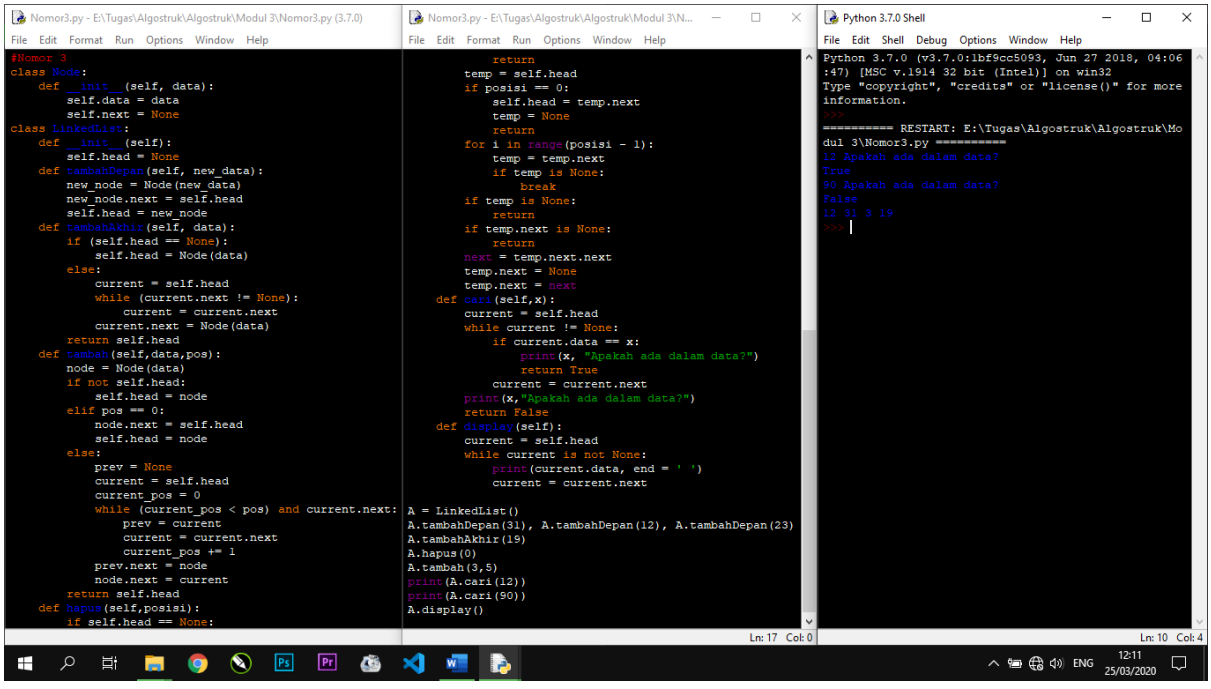
No 1


Nomor1.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor1.py (3.7.0)
File Edit Format Run Options Window Help
A = [[1,2],[3,4],[5,6]]
B = [[7,8],[6,9]]
C = [[7,6],[2,5]]
#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) :
return ("matriks konsisten")
else:
return ("matriks tidak konsisten")
x = matriks()
print("Matriks A")
x.cetakmatriks(A)
print(x.cekkonsisten(A))
print()
y = matriks()
print("Matriks B")
y.cetakmatriks(B)
print(y.cekkonsisten(B))
print()
y = matriks()
print("Matriks C")
y.cetakmatriks(C)
print(y.cekkonsisten(C))
#Nomor 1B
def ordo(matriks):
return ("Ordo "+str(len(matriks))+" x "+str(len(matriks[0])))
print("===")
print("Matriks A: ", ordo(A))
print("Matriks B: ", ordo(B))
print("Matriks C: ", ordo(C))
#Nomor 1C
def Jumlah(matriks1, matriks2):
Ln: 2 Col: 13
Nomor1.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor1.py (3.7.0)
File Edit Format Run Options Window Help
#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],end=' '),
print()
else:
return("Matriks berbeda ukuran")
print("===")
print("Hasil matriks A + B: ",Jumlah(A,B))
print("Hasil matriks B + C: ")
Jumlah(B,C)
#Nomor 1D
o =[]
def Kali(m,n):
if ordo(m) == ordo(n):
for x in range(0, len(m)):
row = []
for y in range (0, len(m[0])):
total = 0
for z in range (0, len(m)):
total = total + (m[x][y]*n[z][y])
row.append(total)
o.append(row)
for x in range (0, len(o)):
for y in range(0, len(o[0])):
print (o[x][y], end=' '),
print()
else:
return("Tidak memenuhi syarat")
print("===")
print("Hasil matriks A * B: ",Kali(A,B))
print("Hasil matriks B * C: ")
Kali(B,C)
Ln: 1 Col: 0
ENG 11:32 25/03/2020
Nomor1.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor1.py (3.7.0)
File Edit Format Run Options Window Help
else:
return("Tidak memenuhi syarat")
print("===")
print("Hasil matriks A * B: ",Kali(A,B))
print("Hasil matriks B * C: ")
Kali(B,C)
#Nomor 1E
def Determinan(p, total = 0):
x = len(p[0])
z = 0
for i in range(len(p)):
if (len(p[i]) == x):
z += 1
if (z == len(p)):
if (x == len(p)):
indices = list(range(len(p)))
if len(p) == 2 and len(p[0]) == 2:
val = p[0][0] * p[1][1] - p[1][0] * p[0][1]
return val
for fc in indices:
pq = p
pq = pq[1:]
height = len(pq)
for i in range(height):
pq[i] = pq[i][0:fc] + pq[i][fc+1:]
sign = (-1) ** (fc % 2)
sub_det = determinanHitung(pq)
total += sign * A[0][fc] * sub_det
else:
return "Tidak bisa dihitung, bukan matriks bujur sangkar"
else:
return "Tidak bisa dihitung, bukan matriks bujur sangkar"
return total
print("===")
print("Determinan A: ",Determinan(A))
print("Determinan B: ",Determinan(B))
print("Determinan C: ",Determinan(C))
Ln: 31 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: E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor1.py ==========
Matriks A
[1, 2]
[3, 4]
[5, 6]
matriks tidak konsisten
Matriks B
[7, 8]
[6, 9]
matriks konsisten
Matriks C
[7, 6]
[2, 5]
matriks konsisten
===
Matriks A: Ordo 3 x 2
Matriks B: Ordo 2 x 2
Matriks C: Ordo 2 x 2
===
Hasil matriks A + B: Matriks berbeda ukuran
Hasil matriks B + C:
14 14
8 14
===
Hasil matriks A * B: Tidak memenuhi syarat
Hasil matriks B * C:
63 88
54 99
===
Determinan A: Tidak bisa dihitung, bukan matriks bujur sangkar
Determinan B: 15
Determinan C: 23
>>>
Ln: 38 Col: 4
ENG 11:32 25/03/2020

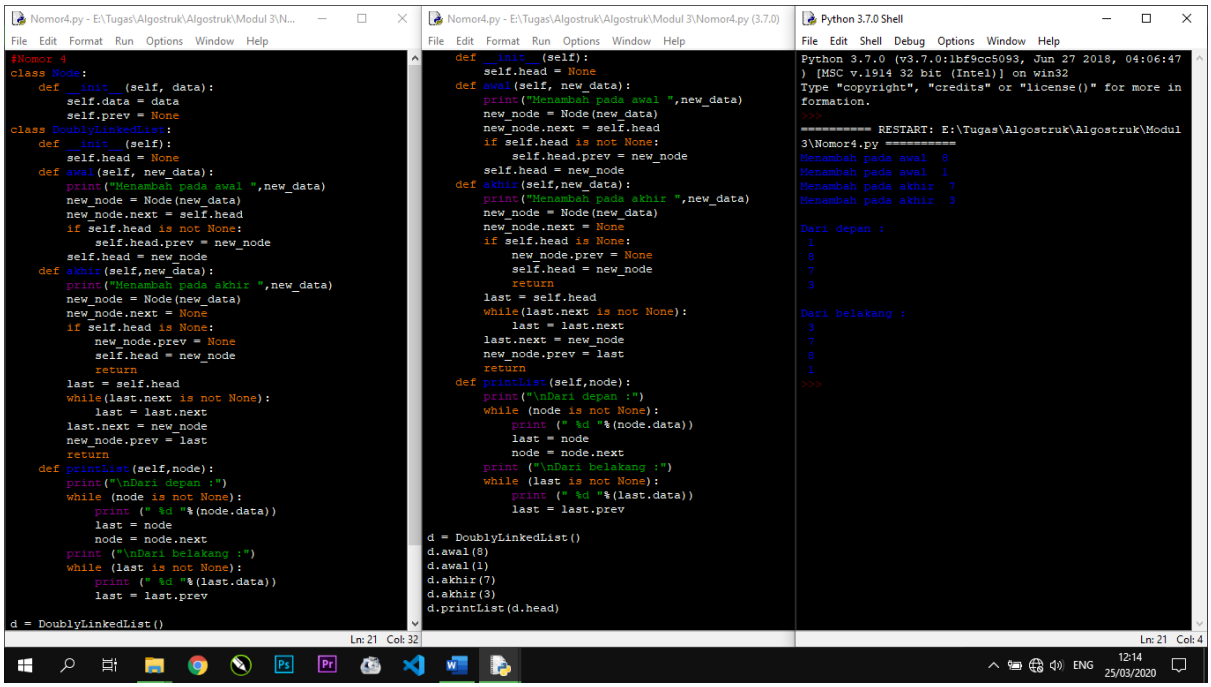
No 2


Nomor2.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor2.py (3.7.0)
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)])
#Nomor 2B
def buatIdentitas(m):
print("Membuat matriks identitas dengan ordo "+str(m)+" x "+str(m))
matriks = [[1 if j == i else 0 for j in range(m)] for i in range(m)]
print(matriks)
buatNol(2)
print("=====")
buatIdentitas(3)
Ln: 15 Col: 47
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: E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor2.py ==========
Membuat matriks 0 dengan ordo 2 x 2
[[0, 0], [0, 0]]
=====
Membuat matriks identitas dengan ordo 3 x 3
[[1, 0, 0], [0, 1, 0], [0, 0, 1]]
>>>
Ln: 10 Col: 4
ENG 12:02 25/03/2020

No 3


Nomor3.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor3.py (3.7.0)
File Edit Format Run Options Window Help
#Nomor 3
class Node:
def __init__(self, data):
self.data = data
self.next = None
class LinkedList:
def __init__(self):
self.head = None
def tambahDepan(self, new_data):
new_node = Node(new_data)
new_node.next = self.head
self.head = new_node
def tambahAkhir(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,posisi):
if self.head == None:
return
temp = self.head
if posisi == 0:
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.tambahAkhir(19)
A.hapus(0)
A.tambah(3,5)
print(A.cari(12))
print(A.cari(90))
A.display()
Ln: 17 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: E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor3.py ==========
12 Apakah ada dalam data?
True
90 Apakah ada dalam data?
False
12 31 3 19
>>>
Ln: 10 Col: 4
ENG 12:11 25/03/2020

No 4


Nomor4.py - E:\Tugas\Algostruk\Algostruk\Modul 3\N...
File Edit Format Run Options Window Help
#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
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
d = DoublyLinkedList()
Ln: 21 Col: 32
Nomor4.py - E:\Tugas\Algostruk\Algostruk\Modul 3\Nomor4.py (3.7.0)
File Edit Format Run Options Window Help
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
d = DoublyLinkedList()
d.awal(8)
d.awal(1)
d.akhir(7)
d.akhir(3)
d.printList(d.head)
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 in
formation.
>>>
========== RESTART: E:\Tugas\Algostruk\Algostruk\Modul
3\Nomor4.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: 21 Col: 4
ENG
12:14
25/03/2020