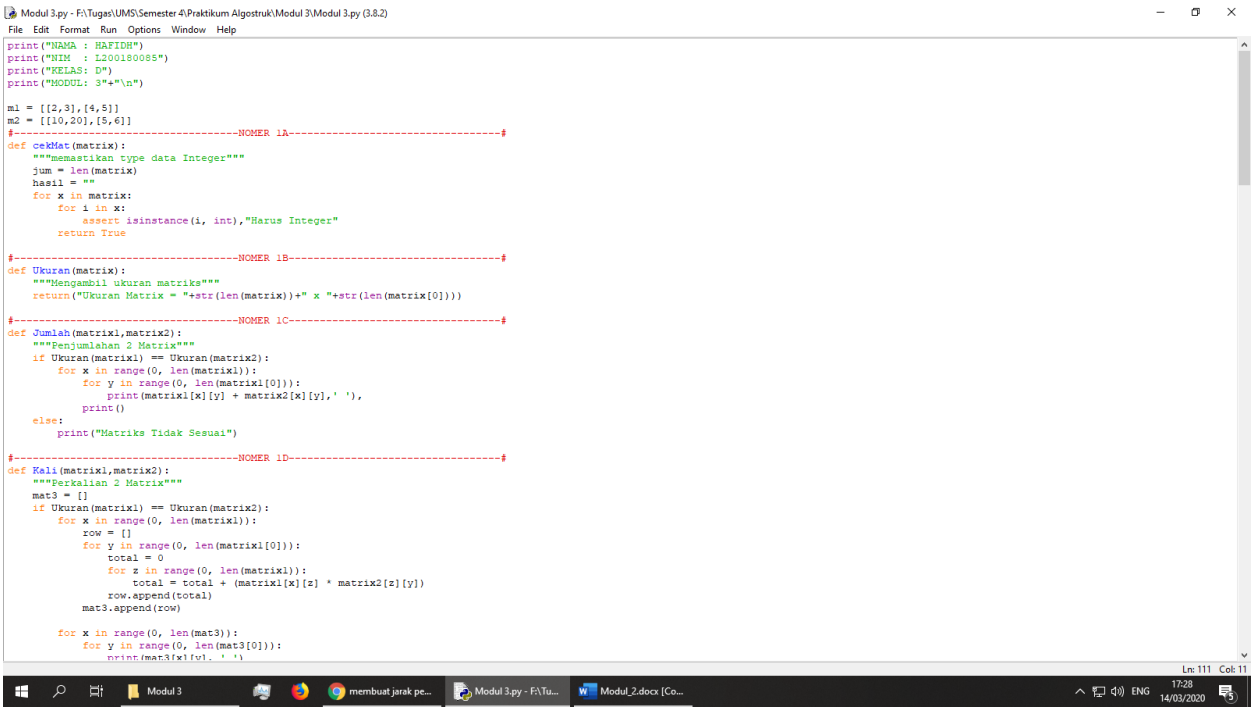
Nama : Hafidh Putra Andhika

NIM : L200180085

Kelas : D

Modul 3

Soal



Modul 3.py - F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py (3.8.2)

File Edit Format Run Options Window Help

```
#-----------------------------------NOMER 1D-----------------------------------#
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], ' ')
            print()
    else:
        print("Matriks Tidak Sesuai")
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[x][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")

#-----------------------------------CEK NOMER 1-----------------------------------#
print("Nomer 1")
print(cekMat(m1))
print(Ukuran(m1))
```

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Modul 3.py - F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py (3.8.2)

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```
#-----------------------------------CEK NOMER 1-----------------------------------#
print("Nomer 1")
print(cekMat(m1))
print(Ukuran(m1))
Jumlah(m1,m2)
Kali(m1,m2)
print(determinan(m1))

#-----------------------------------NOMER 2A-----------------------------------#
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)

#-----------------------------------NOMER 2B-----------------------------------#
def buatIdentitas(m):
    n = m
    matrix = [[1 if j == i else 0 for j in range(m)]for i in range(n)]
    print(matrix)

#-----------------------------------CEK NOMER 2-----------------------------------#

print("Nomer 2")
buatNol(3,3)
buatNol2(3)
buatIdentitas(4)
print("\n")
#-----------------------------------NOMER 3-----------------------------------#
print("nomor 3")
class Node(object):
    def __init__(self, data, next=None):
        self.data = data
        self.next = next

def MakeNode(list):
    a = Node(list[0])
    if len(list) > 1:
        b = a
        for i in range(1,len(list)):
            b.next = Node(list[i])
            b = b.next
    return a

def kunjungi(head):
```

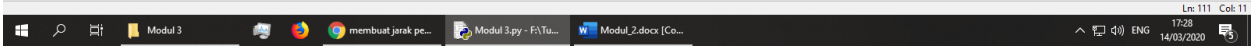
Ln: 111 Col: 11

Modul 3.py - F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py (3.8.2)

File Edit Format Run Options Window Help

```
print("\n")
#-----------------------------------NOMER 3-----------------------------------#
print("nomor 3")
class Node(object):
    def __init__(self, data, next=None):
        self.data = data
        self.next = next

def MakeNode(list):
    a = Node(list[0])
    if len(list) > 1:
        b = a
        for i in range(1,len(list)):
            b.next = Node(list[i])
            b = b.next
    return a

def kunjungi(head):
    curNode = head
    while curNode != None:
        print(curNode.data)
        curNode = curNode.next

def cari(head, yang_dicari):
    temp = head
    while temp != None :
        if temp.data == yang_dicari:
            return temp
        temp = temp.next
    return Node(None)

def tambahDepan(head):
    temp = Node("tambah depan", head)
    return temp

def tambahAkhir(head):
    temp = head
    while temp.next != None:
        temp = temp.next
    temp.next = Node("tambah akhir")
    return head

def tambah(head, posisi):
    """ Menambahkan simpul sebelum posisi """
    temp = head
    while temp != None:
        if temp.next.data == posisi:
            temp_belakang = temp.next
            temp.next = Node("tambah tengah", temp_belakang)
            return head
```

Ln: 111 Col: 11

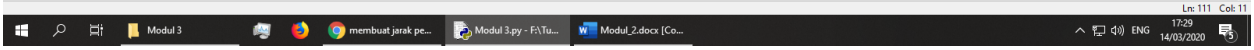


Modul 3.py - F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py (3.8.2)

File Edit Format Run Options Window Help

```
def tambah(head, posisi):
    """ Menambahkan simpul sebelum posisi """
    temp = head
    while temp != None:
        if temp.next.data == posisi:
            temp_belakang = temp.next
            temp.next = Node("tambah tengah", temp_belakang)
            return head
        temp = temp.next
    return None

def hapus(head, posisi):
    temp = head
    while temp != None:
        if temp.next.data == posisi:
            temp_belakang = temp.next.next
            temp.next = temp_belakang
            return head
        temp = temp.next
    return None

a = MakeNode(["Hafidh", "Putra", "Andhika", "hafid", "putra"])

print(a.data)
c = cari(a, "Andhika")
print(c.next.data)

print()
kunjungi(a)

print()
a = tambahDepan(a)
kunjungi(a)

print()
a = tambahAkhir(a)
kunjungi(a)

print()
a = tambah(a, "Andhika")
kunjungi(a)

print()
a = hapus(a, "Andhika")
kunjungi(a)
print("\n")
#-----------------------------------NOMER 4-----------------------------------#
print("Nomor 4")
class DNode(object):
    def __init__(self, data):
```

Ln: 111 Col: 11



Modul 3.py - F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py (3.8.2)

File Edit Format Run Options Window Help

```
print()
a = tambah(a, "Andhika")
kunjungi(a)

print()
a = hapus(a, "Andhika")
kunjungi(a)
print("\n")
#---------------------------------NOMER 4---------------------------------#
print("Nomor 4")
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 = ["e", "f", "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: 111 Col: 11

Modul 3 | membuat jarak pe... | Modul 3.py - F:\Tu... | Modul_2.docx [Co... | ENG 17:29 14/03/2020

Jawaban

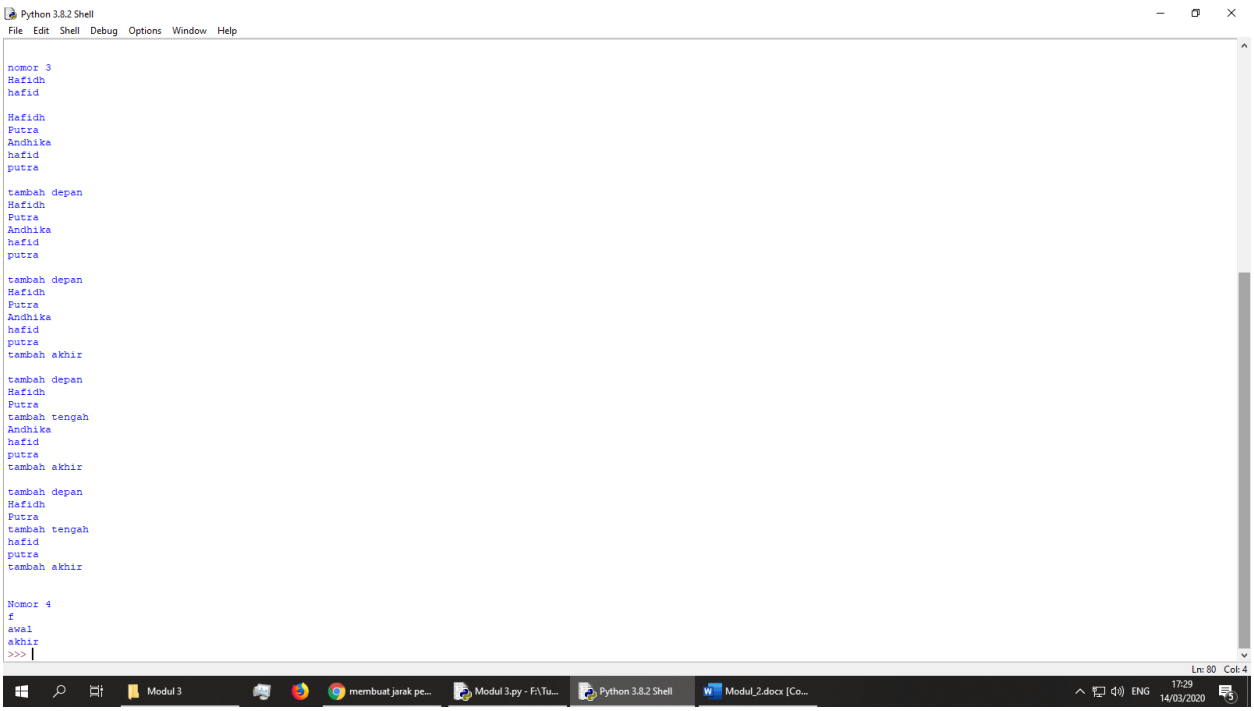
Python 3.8.2 Shell

File Edit Shell Debug Options Window Help

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: F:\Tugas\UMS\Semester 4\Praktikum Algostruk\Modul 3\Modul 3.py ===
NAMA : HAFIDH
NIM  : L200180085
KELAS: D
MODUL: 3

Nomer 1
True
Ukuran Matrix = 2 x 2
12
23

9
11

35
58

65
110

2

Nomer 2
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
[[1, 0, 0, 0], [0, 1, 0, 0], [0, 0, 1, 0], [0, 0, 0, 1]]


nomor 3
Hafidh
hafid

Hafidh
Putra
Andhika
hafid
putra

tambah depan
Hafidh
Putra
Andhika
hafid
putra

tambah depan
```

Ln: 80 Col: 4

Modul 3 | membuat jarak pe... | Modul 3.py - F:\Tu... | Python 3.8.2 Shell | Modul_2.docx [Co... | ENG 17:29 14/03/2020


Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
nomor 3
Hafidh
hafid
Hafidh
Putra
Andhika
hafid
putra
tambah depan
Hafidh
Putra
Andhika
hafid
putra
tambah depan
Hafidh
Putra
Andhika
hafid
putra
tambah akhir
tambah depan
Hafidh
Putra
tambah tengah
Andhika
hafid
putra
tambah akhir
tambah depan
Hafidh
Putra
tambah tengah
hafid
putra
tambah akhir
Nomor 4
f
awal
akhir
>>>
Ln: 80 Col: 4
Modul 3
membuat jarak pe...
Modul 3.py - F:\Tu...
Python 3.8.2 Shell
Modul_2.docx [Co...
ENG
17:29
14/03/2020