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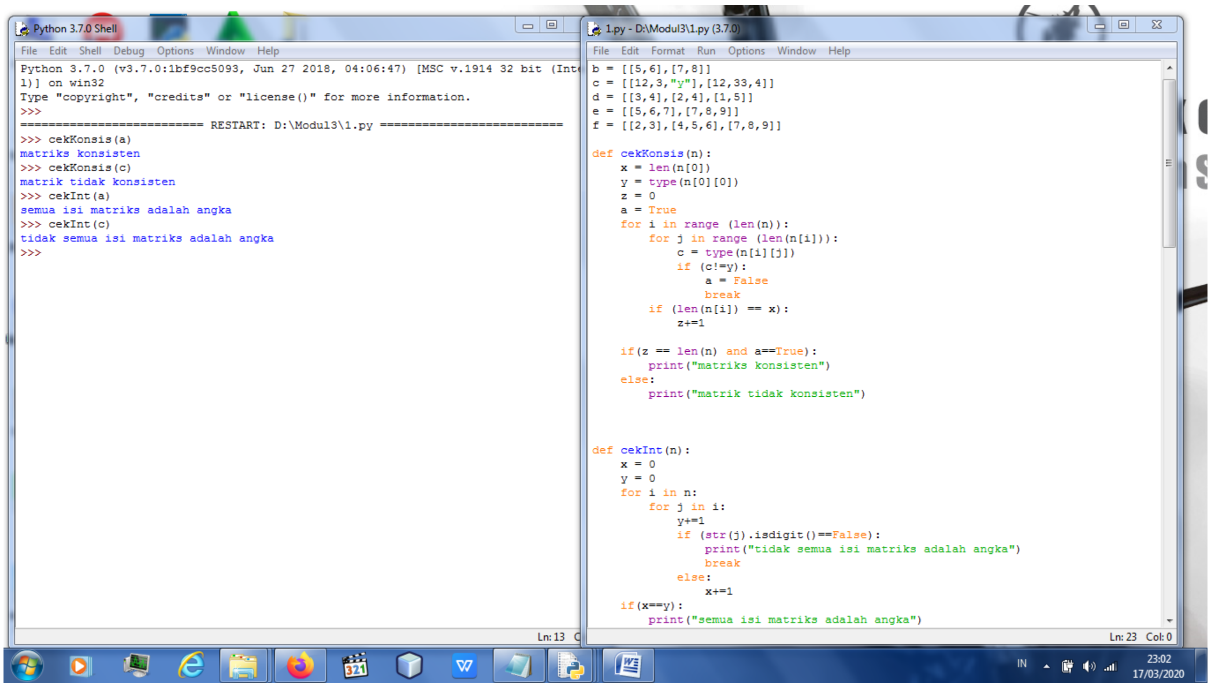
Kelas : G

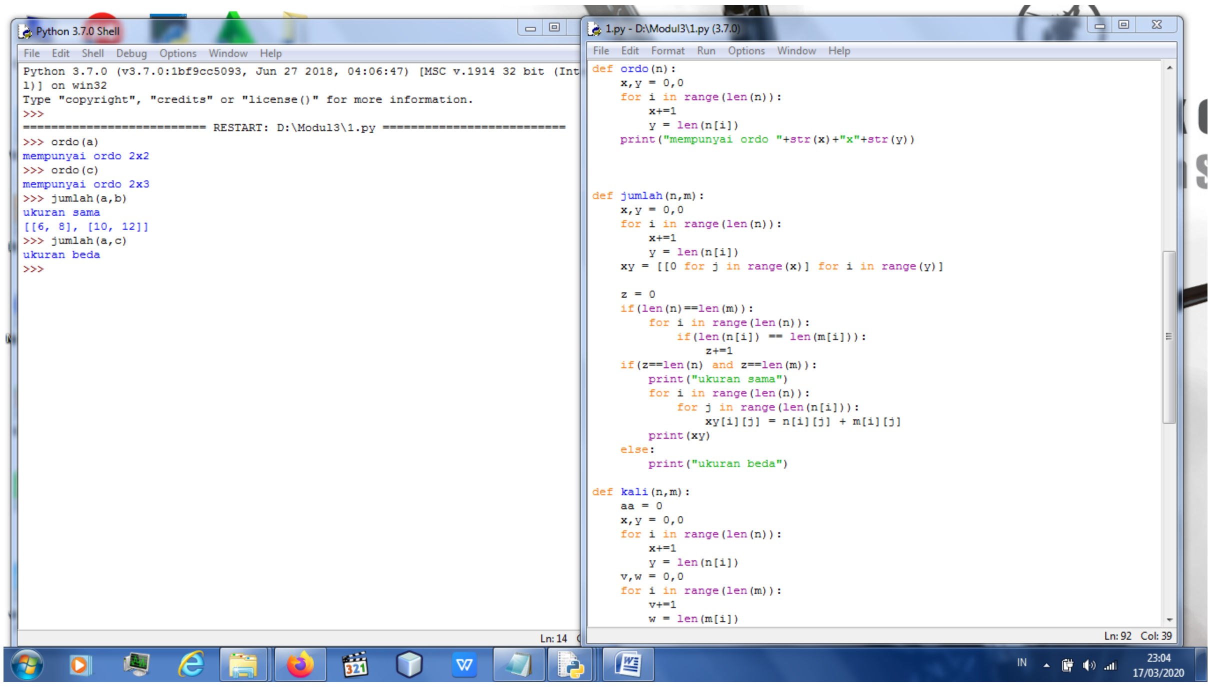
Tugas 3

1.



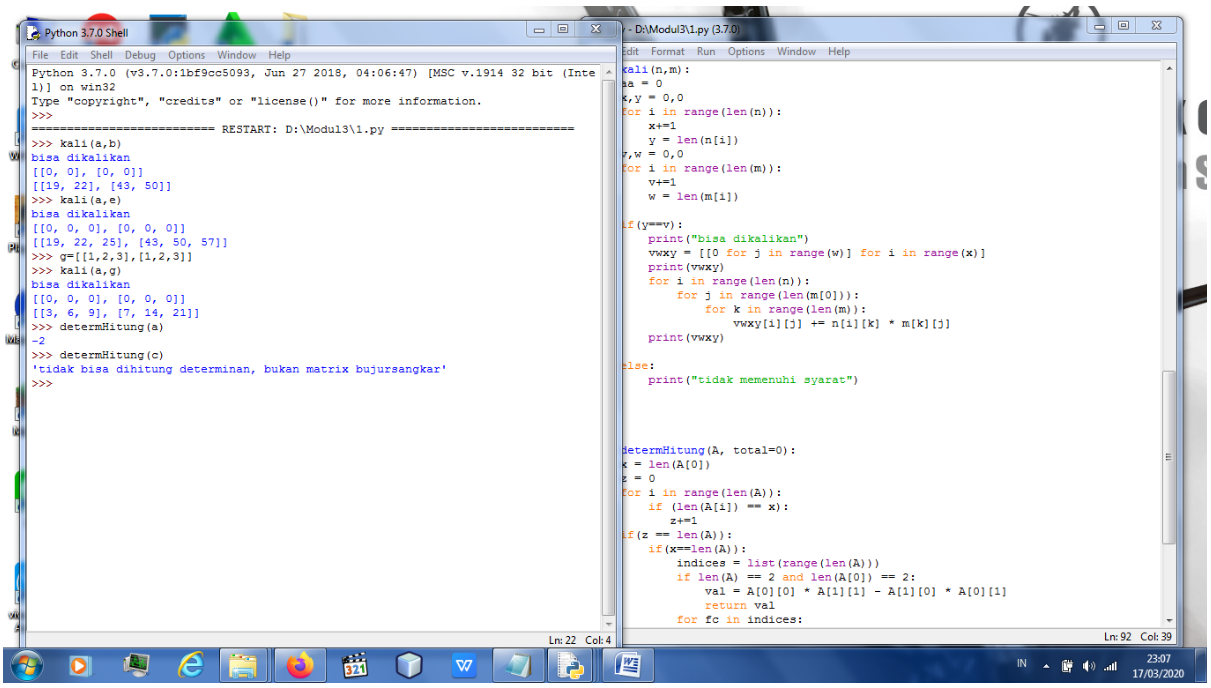
```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> 
========================== RESTART: D:\Modul3\1.py ==========================
>>> cekKonsis(a)
matriks konsisten
>>> cekKonsis(c)
matrik tidak konsisten
>>> cekInt(a)
semua isi matriks adalah angka
>>> cekInt(c)
tidak semua isi matriks adalah angka
>>> 
```

```python
b = [[5,6],[7,8]]
c = [[12,3,"y"],[12,33,4]]
d = [[3,4],[2,4],[1,5]]
e = [[5,6,7],[7,8,9]]
f = [[2,3],[4,5,6],[7,8,9]]

def cekKonsis(n):
    x = len(n[0])
    y = type(n[0][0])
    z = 0
    a = True
    for i in range (len(n)):
        for j in range (len(n[i])):
            c = type(n[i][j])
            if (c!=y):
                a = False
                break
        if (len(n[i]) == x):
            z+=1

    if(z == len(n) and a==True):
        print("matriks konsisten")
    else:
        print("matrik tidak konsisten")



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")
```



```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Int
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> 
========================== RESTART: D:\Modul3\1.py ==========================
>>> ordo(a)
mempunyai ordo 2x2
>>> ordo(c)
mempunyai ordo 2x3
>>> jumlah(a,b)
ukuran sama
[[6, 8], [10, 12]]
>>> jumlah(a,c)
ukuran beda
>>> 
```

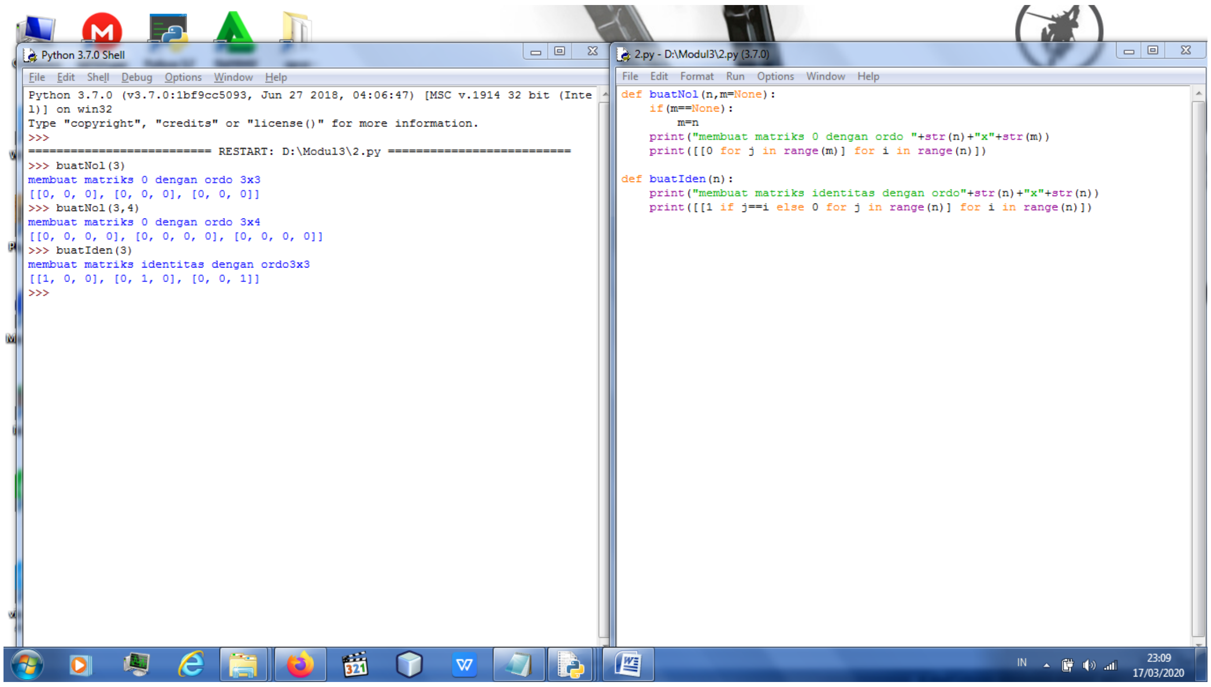
```python
def ordo(n):
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    print("mempunyai ordo "+str(x)+"x"+str(y))



def jumlah(n,m):
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    xy = [[0 for j in range(x)] for i in range(y)]

    z = 0
    if(len(n)==len(m)):
        for i in range(len(n)):
            if(len(n[i]) == len(m[i])):
                z+=1
    if(z==len(n) and z==len(m)):
        print("ukuran sama")
        for i in range(len(n)):
            for j in range(len(n[i])):
                xy[i][j] = n[i][j] + m[i][j]
        print(xy)
    else:
        print("ukuran beda")

def kali(n,m):
    aa = 0
    x,y = 0,0
    for i in range(len(n)):
        x+=1
        y = len(n[i])
    v,w = 0,0
    for i in range(len(m)):
        v+=1
        w = len(m[i])
```



```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========================= RESTART: D:\Modul3\1.py =========================
>>> kali(a,b)
bisa dikalikan
[[0, 0], [0, 0]]
[[19, 22], [43, 50]]
>>> kali(a,e)
bisa dikalikan
[[0, 0, 0], [0, 0, 0]]
[[19, 22, 25], [43, 50, 57]]
>>> g=[[1,2,3],[1,2,3]]
>>> kali(a,g)
bisa dikalikan
[[0, 0, 0], [0, 0, 0]]
[[3, 6, 9], [7, 14, 21]]
>>> determHitung(a)
-2
>>> determHitung(c)
'tidak bisa dihitung determinan, bukan matrix bujursangkar'
>>>
```

```
kali(n,m):
aa = 0
x,y = 0,0
for i in range(len(n)):
    x+=1
    y = len(n[i])
v,w = 0,0
for i in range(len(m)):
    v+=1
    w = len(m[i])

if(y==v):
    print("bisa dikalikan")
    vwxy = [[0 for j in range(w)] for i in range(x)]
    print(vwxy)
    for i in range(len(n)):
        for j in range(len(m[0])):
            for k in range(len(m)):
                vwxy[i][j] += n[i][k] * m[k][j]
    print(vwxy)

else:
    print("tidak memenuhi syarat")




determHitung(A, total=0):
x = len(A[0])
z = 0
for i in range(len(A)):
    if (len(A[i]) == x):
       z+=1
if(z == len(A)):
    if(x==len(A)):
        indices = list(range(len(A)))
        if len(A) == 2 and len(A[0]) == 2:
            val = A[0][0] * A[1][1] - A[1][0] * A[0][1]
            return val
        for fc in indices:
```

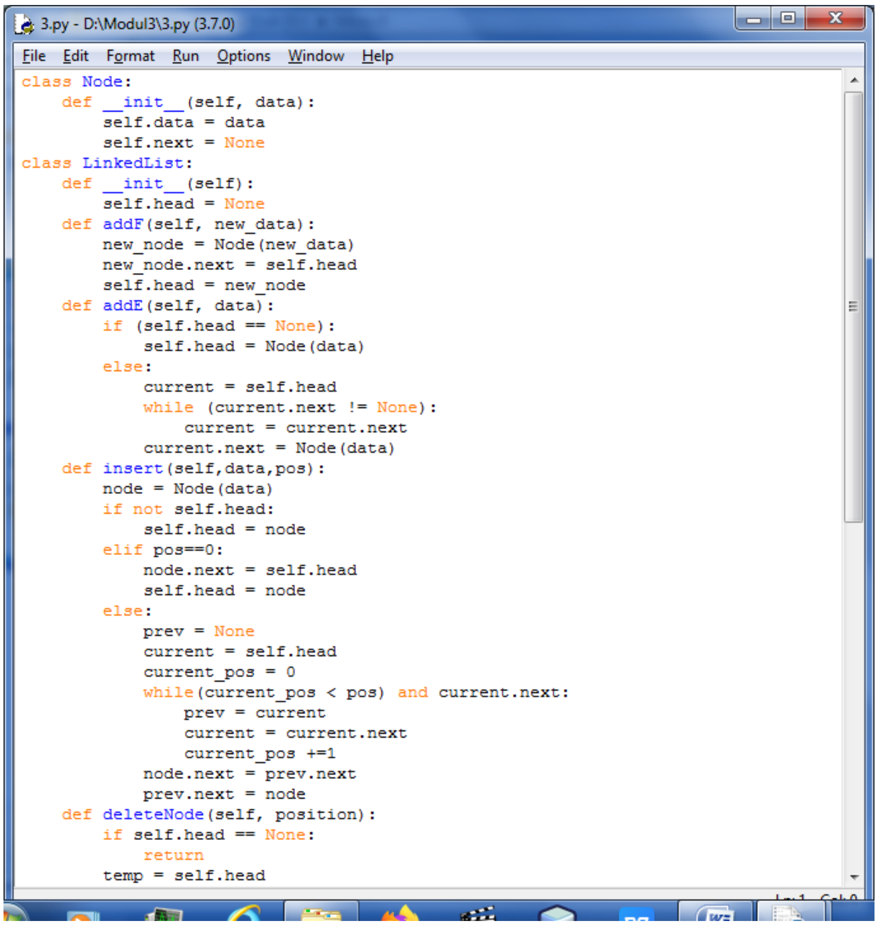
2.



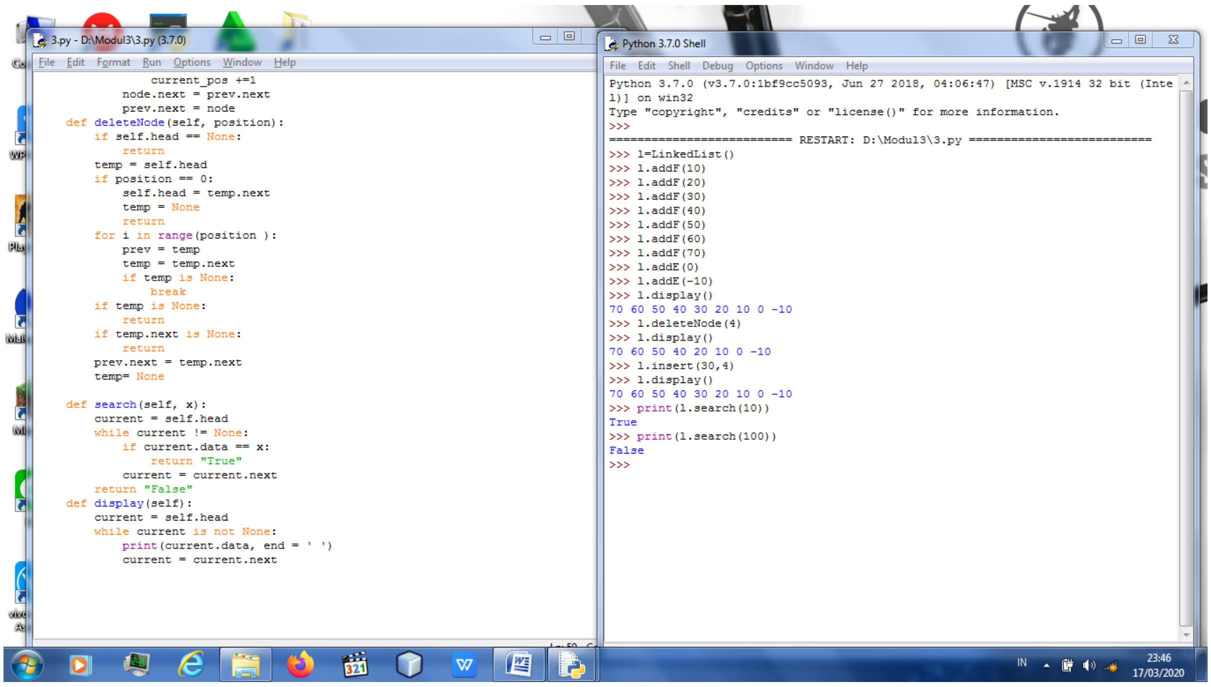
```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========================= RESTART: D:\Modul3\2.py =========================
>>> buatNol(3)
membuat matriks 0 dengan ordo 3x3
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
>>> buatNol(3,4)
membuat matriks 0 dengan ordo 3x4
[[0, 0, 0, 0], [0, 0, 0, 0], [0, 0, 0, 0]]
>>> buatIden(3)
membuat matriks identitas dengan ordo3x3
[[1, 0, 0], [0, 1, 0], [0, 0, 1]]
>>>
```

```
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)])

def buatIden(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)])
```

3.



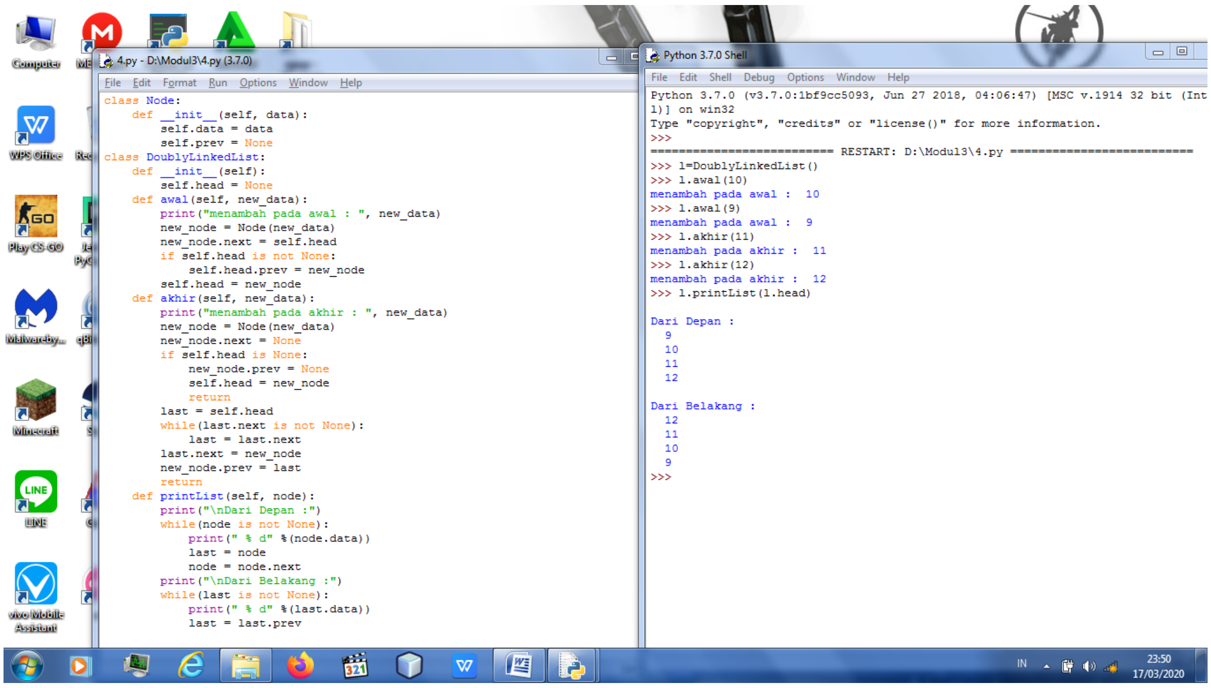
```
class Node:
    def __init__(self, data):
        self.data = data
        self.next = None
class LinkedList:
    def __init__(self):
        self.head = None
    def addF(self, new_data):
        new_node = Node(new_data)
        new_node.next = self.head
        self.head = new_node
    def addE(self, data):
        if (self.head == None):
            self.head = Node(data)
        else:
            current = self.head
            while (current.next != None):
                current = current.next
            current.next = Node(data)
    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
            node.next = prev.next
            prev.next = node
    def deleteNode(self, position):
        if self.head == None:
            return
        temp = self.head
```



```
                current_pos +=1
            node.next = prev.next
            prev.next = node
    def deleteNode(self, position):
        if self.head == None:
            return
        temp = self.head
        if position == 0:
            self.head = temp.next
            temp = None
            return
        for i in range(position ):
            prev = temp
            temp = temp.next
            if temp is None:
                break
        if temp is None:
            return
        if temp.next is None:
            return
        prev.next = temp.next
        temp= None

    def search(self, x):
        current = self.head
        while current != None:
            if current.data == x:
                return "True"
            current = current.next
        return "False"
    def display(self):
        current = self.head
        while current is not None:
            print(current.data, end = ' ')
            current = current.next
```

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========================= RESTART: D:\Modul3\3.py =========================
>>> l=LinkedList()
>>> l.addF(10)
>>> l.addF(20)
>>> l.addF(30)
>>> l.addF(40)
>>> l.addF(50)
>>> l.addF(60)
>>> l.addF(70)
>>> l.addE(0)
>>> l.addE(-10)
>>> l.display()
70 60 50 40 30 20 10 0 -10
>>> l.deleteNode(4)
>>> l.display()
70 60 50 40 20 10 0 -10
>>> l.insert(30,4)
>>> l.display()
70 60 50 40 30 20 10 0 -10
>>> print(l.search(10))
True
>>> print(l.search(100))
False
>>>
```

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
```

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Int
1)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========================== RESTART: D:\Modul3\4.py ==========================
>>> l=DoublyLinkedList()
>>> l.awal(10)
menambah pada awal :  10
>>> l.awal(9)
menambah pada awal :  9
>>> l.akhir(11)
menambah pada akhir :  11
>>> l.akhir(12)
menambah pada akhir :  12
>>> l.printList(l.head)

Dari Depan :
  9
  10
  11
  12

Dari Belakang :
  12
  11
  10
  9
>>>
```