Nama : kevin hansa wardhana
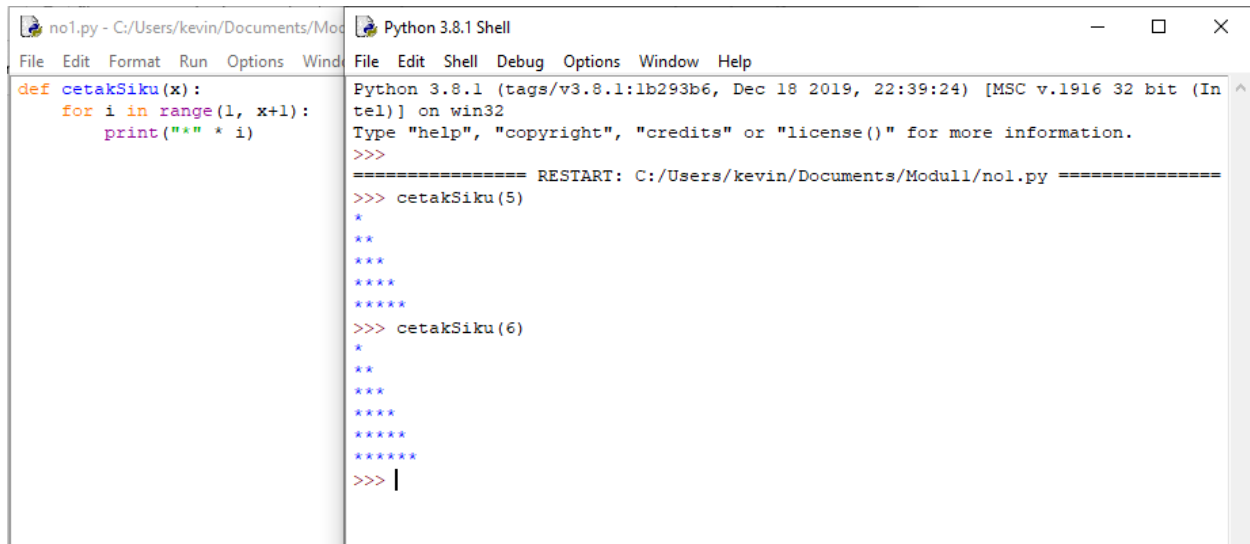NIM : L200180004
Kelas : A
Modul : 1

Praktikum Algoritma dan Struktur Data
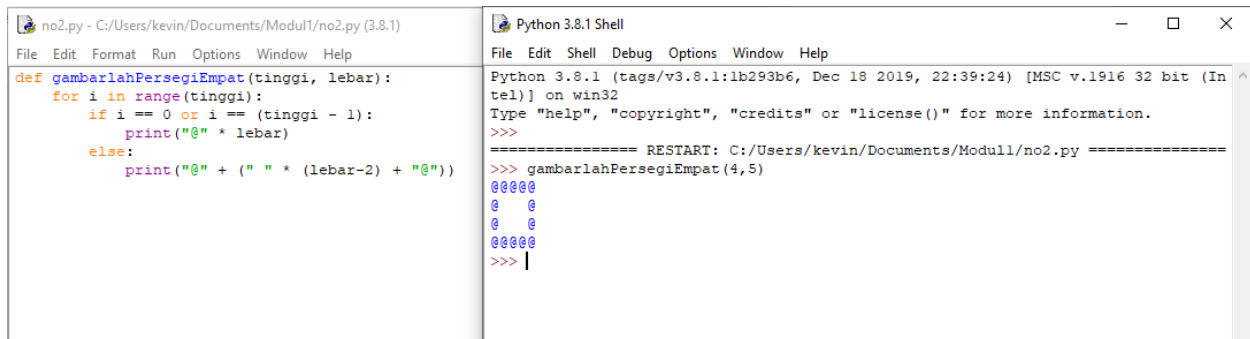
1.

2.

3.

```
vokal = 'aiueo'
def jumlahHurufVokal(kata):
    jmlVkl = 0
    pjgKata = len(kata)
    for huruf in kata:
        if huruf in vokal:
            jmlVkl += 1
    print('(' + str(pjgKata) + ',' + str(jmlVkl) + ')')

def jumlahHurufKonsonan(kata):
    jmlKonso = 0
    pjgKata = len(kata)
    for huruf in kata:
        if huruf not in vokal:
            jmlKonso += 1
    print('(' + str(pjgKata) + ',' + str(jmlKonso) + ')')
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================ RESTART: C:/Users/kevin/Documents/Modul1/no3.py ===============
>>> jumlahHurufVokal('surakarta')
(9,4)
>>> jumlahHurufKonsonan('surakarta')
(9,5)
>>>
```

4.

```
def rerata(b):
    jumlah = 0
    for i in b:
        jumlah += i
    hasil = jumlah/len(b)
    return hasil
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================ RESTART: C:/Users/kevin/Documents/Modul1/no4.py ===============
>>> rerata([1,2,3,4,5])
3.0
>>> g=[3,4,5,4,3,4,5,2,2,10,11,23]
>>> rerata(g)
6.333333333333333
>>>
```

5.

```
Python 3.8.1 (tags/v3.8
tel)] on win32
Type "help", "copyright
>>>
================ RESTAR
>>> apakahPrima(17)
True
>>> apakahPrima(97)
True
>>> apakahPrima(123)
False
>>>
```

```
from math import sqrt as sq
def apakahPrima(n):
    n = int(n)
    assert n >= 0
    primaKecil = [2, 3, 5, 7, 11]
    bukanPrKecil = [0, 1, 4, 6, 8, 9, 10]
    if n in primaKecil:
        return True
    elif n in bukanPrKecil:
        return False
    else:
        for i in range(2, int(sq(n) + 1)):
            if (n % i) == 0:
                return False
            else:
                return True
```

6.

```python
from math import sqrt as sq
def apakahPrima(n):
    n = int(n)
    assert n >= 0
    primaKecil = [2, 3, 5, 7, 11]
    bukanPrKecil = [0, 1, 4, 6, 8, 9, 10
    if n in primaKecil:
        return True
    elif n in bukanPrKecil:
        return False
    else:
        for i in range(2, int(sq(n)) + 1
            if (n % i) == 0:
                return False
        else:
            return True


for i in range(2, 1001):
    if apakahPrima(i):
        print(i)
```

```
733
739
743
751
757
761
769
773
787
797
809
811
821
823
827
829
839
853
857
859
863
877
881
883
887
907
911
919
929
937
941
947
953
967
971
977
983
991
997
>>> |
```

7.

```python
def faktorPrima(x):
    a = []
    b = []
    bil = x
    for i in range(2, x+1):
        prima = True
        for u in range(2, i):
            if i % u == 0:
                prima = False
        if prima:
            a.append(i)
    idx = 0
    while bil > 1:
        try:
            if (bil % a[idx]) == 0:
                hasil = bil / a[idx]
                bil = hasil
                b.append(a[idx])
            else:
                idx = idx + 1
        except IndexError:
            break
    print(b)
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more infor
>>>
================ RESTART: C:/Users/kevin/Documents/Modul1/no7.py
>>> faktorPrima(10)
[2, 5]
>>> faktorPrima(120)
[2, 2, 2, 3, 5]
>>> faktorPrima(19)
[19]
>>>
```

8.

```python
def apakahTerkandung(a, b):
    return a in b
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 20
tel)] on win32
Type "help", "copyright", "credits" or "lice:
>>>
================ RESTART: C:/Users/kevin/Doc
>>> h='do'
>>> k='Indonesia tanah air beta'
>>> apakahTerkandung(h, k)
True
>>> apakahTerkandung('pusaka', k)
False
>>>
```

9.

```
no9.py - C:/Users/kevin/Documents/Modul1/no9.py

File  Edit  Format  Run  Options  Window  Help

for i in range(1, 101):
    if(i % 3) == 0 and (i % 5) == 0:
        i = "Python UMS"
    elif(i % 3) == 0:
        i = "Python"
    elif(i % 5) == 0:
        i = "UMS"
    print(i)
```

```
Python 3.8.1 Shell

File  Edit  Shell  Debug

62
Python
64
UMS
Python
67
68
Python
UMS
71
Python
73
74
Python UMS
76
77
Python
79
UMS
Python
82
83
Python
UMS
86
Python
88
89
Python UMS
91
92
Python
94
UMS
Python
97
98
Python
UMS
>>> |
```

10.

```python
from math import sqrt as akar
def selesaikanABC(a, b, c):
    a = float(a)
    b = float(b)
    c = float(c)
    D = b**2 - 4*a*c
    if D < 0:
        print('Determinan negatif. Persamaan tidak mempunyai akar real.')
    else:
        x1 = (-b + akar(D))/(2*a)
        x2 = (-b - akar(D))/(2*a)
        hasil = (x1, x2)
        return hasil
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more infor
>>>
=============== RESTART: C:/Users/kevin/Documents/Modul1/no10.py
>>> selesaikanABC(1,2,3)
Determinan negatif. Persamaan tidak mempunyai akar real.
>>>
```

11.

```python
def cekKabisat(n):
    if n % 4 == 0:
        if n % 100 == 0 and n % 400 == 0:
            return True
        elif n % 100 == 0 and n % 400 != 0:
            return False
        return True
    return False


def apakahKabisat(n):
    if cekKabisat(n):
        print(str(n) + " adalah Tahun kabisat")
    else:
        print(str(n) + " bukan Tahun kabisat")

#contoh tahun
apakahKabisat(1896)
apakahKabisat(1897)
apakahKabisat(1900)
apakahKabisat(2000)
apakahKabisat(2004)
apakahKabisat(2100)
apakahKabisat(2400)
```

```
Python 3.8.1 (tags/v3.8.1:1b
tel)] on win32
Type "help", "copyright", "c
>>>
=============== RESTART: C:/
1896 adalah Tahun kabisat
1897 bukan Tahun kabisat
1900 bukan Tahun kabisat
2000 adalah Tahun kabisat
2004 adalah Tahun kabisat
2100 bukan Tahun kabisat
2400 adalah Tahun kabisat
>>>
```

12.

```python
import random
r = random.randint(1, 100)
a = '''Permainan tebak angka
saya menyimpan sebuah angka bulat antara 1 sampai

print(a)

b = "Masukkan tebakan ke-"
f = ":> "
c = 1
d = str(c)

for i in range(1, 100):
    e = (b+d+f)
    a = int(input(e))
    c += 1
    d = str(c)
    if a < r:
        print("Itu terlalu kecil. Coba lagi.")
    elif a > r:
        print("Itu terlalu besar. Coba lagi.")
    elif a == r:
        print("Ya. Anda benar")
        break
```

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more inform
>>>
=============== RESTART: C:/Users/kevin/Documents/Modul1/no12.py ==
Permainan tebak angka
saya menyimpan sebuah angka bulat antara 1 sampai 100. coba tebak.
Masukkan tebakan ke-1:> 66
Itu terlalu besar. Coba lagi.
Masukkan tebakan ke-2:> 50
Itu terlalu besar. Coba lagi.
Masukkan tebakan ke-3:> 30
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-4:> 45
Itu terlalu kecil. Coba lagi.
Masukkan tebakan ke-5:> 47
Ya. Anda benar
>>>
```

13.

```
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more inform
>>>
=============== RESTART: C:/Users/kevin/Documents/Modul1/no13.py =
>>> katakan(3125750)
'Tiga Juta Seratus Dua Puluh Lima Ribu Tujuh Ratus Lima Puluh '
>>>
```

```python
def katakan(bil):
    angka = ["", "Satu ", "Dua ", "Tiga ", "Empat ", "Lima ", "Enam ",
             "Tujuh ", "Delapan ", "Sembilan ", "Sepuluh ", "Sebelas "]
    hasil = ""
    n = int(bil)
    if 0 <= n <= 11:
        hasil = angka[n]
    elif n < 20:
        hasil = katakan(n - 10) + "Belas"
    elif n < 100:
        hasil = katakan(n / 10) + "Puluh " + katakan(n % 10)
    elif n < 200:
        hasil = "Seratus " + katakan(n - 100)
    elif n < 1000:
        hasil = katakan(n / 100) + "Ratus " + katakan(n % 100)
    elif n < 2000:
        hasil = "Seribu " + katakan(n - 1000)
    elif n < 1000000:
        hasil = katakan(n / 1000) + "Ribu " + katakan(n % 1000)
    elif n < 1000000000:
        hasil = katakan(n / 1000000) + "Juta " + katakan(n % 1000000)
    elif n > 1000000000:
        hasil = "Maaf, program tidak membaca angka lebih dari Satu Milyar"
    return hasil
```

14.

```
Python 3.8.1 (tags/v3.8.1:1b293b6,
tel)] on win32
Type "help", "copyright", "credits"
>>>
=== RESTART: C:/Users/kevin/AppData
>>> formatRupiah(1500)
'Rp 1.500'
>>> formatRupiah(2560000)
'Rp 2.560.000'
>>>
```

```python
def formatRupiah(n):
    y = str(n)
    if len(y) <= 3:
        return 'Rp ' + y
    else:
        p = y[-3:]
        q = y[:-3]
        return formatRupiah(q) + '.' + p
```