PRAKTIKUM ALGORITMA DAN STRUKTUR DATA

PRAKTIKUM MODUL 1

PENGENALAN PYTHON

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1.

```
### Nomor 1 ###


def cetakSiku(x):
    for i in range (x):
        for r in range (i+1):
            print("*", end='')
        print('')

a = int(input("Masukkan nilai : "))
cetakSiku(a)

```

2.

```
### Nomor 2 ###


def gambarlahPersegiEmpat(a,b):
   for i in range (a):
        for r in range (b):
            if i == 0 or i == a-1 or r == 0 or r == b-1:
              print("@", end='')
            else:
                print(" ",end="")
        print()

gambarlahPersegiEmpat(4,5)

```

3.

```
### Nomor 3A ###


def hurufVokal(a):

    vokal = ['a','i','u','e','o']
    jml_huruf = 0
    jml_vokal = 0

    for i in a:
        jml_huruf += 1
        if i in vokal:
            jml_vokal += 1

    x = (jml_huruf,jml_vokal)
    print(x)

a = input('Masukkan kata : ')
hurufVokal(a)

```

```
50  ### Nomor 3B ###
51
52
53  def hurufKonsonan(a):
54
55      vokal = ['a','i','u','e','o']
56      jml_huruf = 0
57      jml_vokal = 0
58
59      for i in a:
60          jml_huruf += 1
61          if i in vokal:
62              jml_vokal += 1
63
64      jml_konsonan = jml_huruf-jml_vokal
65      x = (jml_huruf,jml_konsonan)
66      print(x)
67
68  a = input('Masukkan kata : ')
69  hurufKonsonan(a)
70
```

4.

```
72  ### Nomor 4 ###
73
74
75  def rerata(b):
76      x = sum (b) / len (b)
77      print(x)
78
79  rerata([1,2,3,4,5])
80  g = [3,4,5,4,3,4,5,2,2,10,11,23]
81  rerata(g)
82
```

5.

```
### Nomor 5 ###


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:
                print ('False')
        print ('True')

apakahPrima(17)
apakahPrima(97)
apakahPrima(123)

```

6.

```
### Nomor 6 ###


from math import sqrt as sq
def angkaPrima(a):
    if a < 2:
        return False
    for i in range(2,int(sq(a))+1):
        if a % i == 0:
            return False
    return True

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

```

7.

```python
### Nomor 7 ###


def faktorisasiPrima(n):
    faktor = []
    i = 2
    while i <= n:
        if n % i == 0:
            faktor.append(i)
            n = n / i
        else:
            i += 1
    return faktor

n = int(input("Masukkan bilangan bulat positif: "))
faktor_prima = faktorisasiPrima(n)
print("Faktorisasi prima dari", n, "adalah:", faktor_prima)

```

8.

```python
### Nomor 8 ###


def apakahTerkandung(a,b):
    if a in b:
        print('true')
    else:
        print('false')

a = input('Masukkan kata a : ')
b = input('Masukkan kata b : ')
apakahTerkandung(a,b)

```

9.

```
160  ### Nomor 9 ###
161
162
163  for i in range (1,100):
164      if i % 3 == 0 and i % 5 == 0:
165          print('Python UMS')
166      elif (i % 3) == 0:
167          print('Python')
168      elif (i % 5) == 0:
169          print('UMS')
170      else:
171          print(i)
172
```

10.

```
174  ### Nomor 10 ###
175
176
177  from math import sqrt as sq
178  def selesaikanABC(a,b,c):
179      a = float(a)
180      b = float(b)
181      c = float(c)
182      d = (b**2) - (4*a*c)
183      if (d < 0):
184          print("Determinan negatif. Persamaan tidak mempunyai akar real.")
185      else:
186          x1 = (-b + sq(d))/(2*a)
187          x2 = (-b - sq(d))/(2*a)
188          hasil = (x1,x2)
189          print(hasil)
190
191  selesaikanABC(1,2,3)
192
```

11.

```
### Nomor 11 ###


def apakahKabisat(a):
    if (a % 4) == 0:
        if (a % 100) == 0:
            if (a % 400) == 0:
                print('true')
            else:
                print('false')
        else:
            print('true')
    else:
        print('false')

apakahKabisat(2400)

```

12.

```
### Nomor 12 ###


import random

a = random.randint(1,100)
b = int(input('Tebak angka : '))
print('Permainan tebak angka.'+'\n'+'Saya menyimpan sebuah angka bulat antara 1 sampai 100. Coba tebak')

for i in range(1,100):
    if i == a:
        print('angka random : ', i)
        if i == b:
            print('tebakan anda benar')
        elif i > b:
            print('angka', b ,'terlalu kecil, silahkan coba lagi')
        else:
            print('angka', b ,'terlalu besar, silahkan coba lagi')

```

13.

```
### Nomor 13 ###


angka = {1:"satu " , 2:"dua " , 3:"tiga " , 4:"empat " , 5:"lima " , 6:"enam " , 7:"tujuh " , 8:"delapan " , 9:"sembilan "}

b = "puluh "
c = "ratus "
d = "ribu "
e = "juta "
f = "milyar "
g = "triliun "

def katakan(x):
    y = str(x)
    n = len(y)
    if n <= 3:
        if n == 1:
            if y == "0":
                print ("")
            else:
                print (angka[int(y)])
        elif n == 2:
            if y[0] == "1":
                if y[1] == "1":
                    print ("sebelas")
                elif y[0] == "0":
                    x = y[1]
                    print (katakan(x))
                elif y[1] == "0":
                    print ("sepuluh")
                else:
                    print (angka[int(y[1])] + "belas")
            elif y[0] == "0":
                x = y[1]
                print (katakan(x))
            else:
                x = y[1]
                print (angka[int(y[0])] + b + katakan(x))
        else:
            if y[0] == "1":
                x = y[1:]
                print ("seratus " + katakan(x))
            elif y[0] == "0":
                x = y[1:]
                print (katakan(x))
            else:
                x = y[1:]
                print (angka[int(y[0])] + c + katakan(x))
    elif 3 < n <= 6:
        p = y[-3:]
        q = y[:-3]
        if q == "1":
            print  ("seribu " + katakan(p))
        elif q == "000":
            return katakan(p)
        else:
            print (katakan(q) + d + katakan(p))
    elif 6 < n <=9:
        r = y[-6:]
        s = y[:-6]
        print (katakan(s) + e + katakan(r))
```

```
293         elif 9 < n <=12:
294             t = y[-9:]
295             u = y[:-9]
296             print (katakan(u) + f + katakan(t))
297         else:
298             v = y[-12:]
299             w = y[:-12]
300             print (katakan(w) + g + katakan(v))
```

14.

```
305 ### Nomor 14 ###
306
307
308 def formatRupiah(a):
309     rupiah = "Rp {:,.0f}".format(a)
310     print(rupiah)
311
312 formatRupiah(1500)
313 formatRupiah(2560000)
314
```