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Kelas : H

MODUL 1

Nomor 1

```
1 def cetakSiku(x):
2     for i in range(x+1):
3         print(i*" ")
4
5     cetakSiku(5)
```

cetakSiku() > for i in range(x+1)

in: scratch_1 x

C:\Users\reza\PycharmProjects\AlgoStruk\

```
*
**
***
****
*****
```

Process finished with exit code 0

Nomor 2

```
1 def gambarSegiEmpat(a,b):
2     for i in range(a):
3         if i==0 or i==a-1:
4             print("@"*b)
5         else:
6             print("@ "+" "*(b-2)+"@")
7
8     gambarSegiEmpat(4,5)
```

gambarSegiEmpat() > for i in range(a) > else

in: scratch_1 x

C:\Users\reza\PycharmProjects\AlgoStruk\venv\

```
@@@@
@  @
@  @
@@@@
```

Process finished with exit code 0

Nomor 3a

<pre> def jumlahHurufVokal(hrf): vokal="AIUEOaiueo" a=0 hasil=0 for i in hrf: if i in vokal: a+=len(i) else: a+=0 hasil=len(hrf),a return hasil </pre>	<pre> Python 3.6.5 Shell Python 3.6.5 (v3.6.5:f59c0932b4, Mar 1) on win32 Type "copyright", "credits" or "license()" >>> ==== RESTART: C:\Users\reza\PycharmProjects\ >>> k=jumlahHurufVokal("Surakarta") >>> k (9, 4) >>> </pre>
--	--

Nomor 3b

<pre> def jumlahHurufKonsonan(hrf): konsonan="BCDFGHJKLMNPQRSTVWXYZbcd" b=0 hasil=0 for i in hrf: if i in konsonan: b+=len(i) else: b+=0 hasil=len(hrf),b return hasil </pre>	<pre> Python 3.6.5 Shell Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2017) on win32 Type "copyright", "credits" or "license()" >>> == RESTART: C:\Users\reza\PycharmProjects\ >>> k = jumlahHurufKonsonan("Surakarta") >>> k (9, 5) >>> </pre>
---	---

Nomor 4

<pre> def rerata(x): jumlah = 0 for i in range(len(x)): jumlah += x[i] jumlah = jumlah/len(x) return jumlah </pre>	<pre> (9, 5) >>> ===== RESTART: C:\Users\reza\PycharmProjects\ >>> rerata([1,2,3,4,5]) 3.0 >>> g = [4,7,3,5,7,3,2,6,7,4,5,3,9,20,18] >>> rerata(g) 6.866666666666667 >>> </pre>
--	--

Nomor 5

```
apakahPrima.py - C:\Users\reza\PycharmProjects\AlgoStr
File Edit Format Run Options Window Help
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
        return True

===== RESTART: C:\Users\reza
>>> apakahPrima(16)
False
>>> apakahPrima(23)
SyntaxError: invalid syntax
>>> apakahPrima(23)
True
>>> apakahPrima(71)
True
>>> |
```

Nomor 6

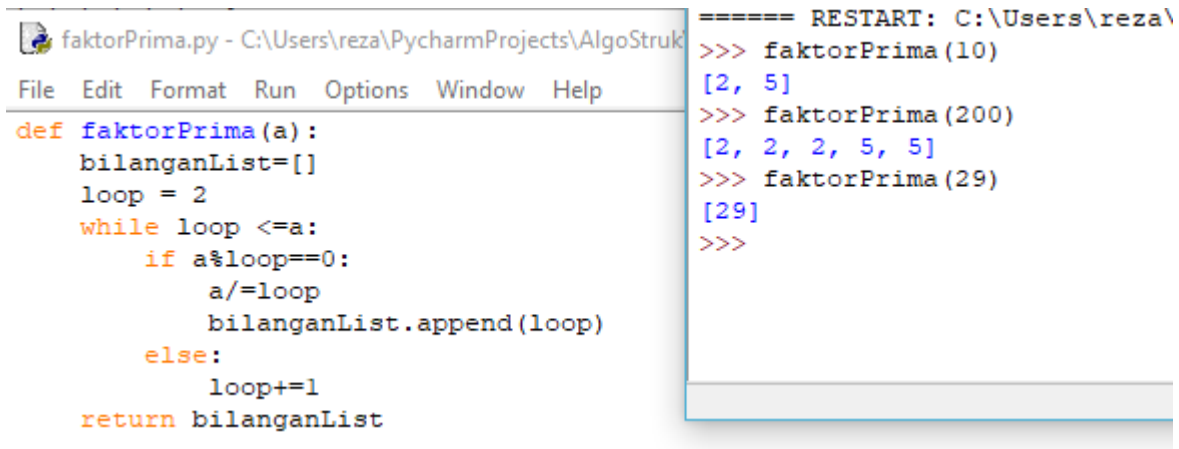
```
1 lower = 2
2 upper = 1000
3 if lower >= 1 and upper > 1:
4     for x in range(lower, upper):
5         prima = True
6         for i in range(2, x):
7             if (x % i == 0):
8                 prima = False
9         if prima == True:
10            print(x)
11 else:
12     print("Bukan Bilangan Prima")
```

Bilangan Prima x

C:\Users\reza\PycharmProjects\AlgoStruk\ver

2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73

Nomor 7

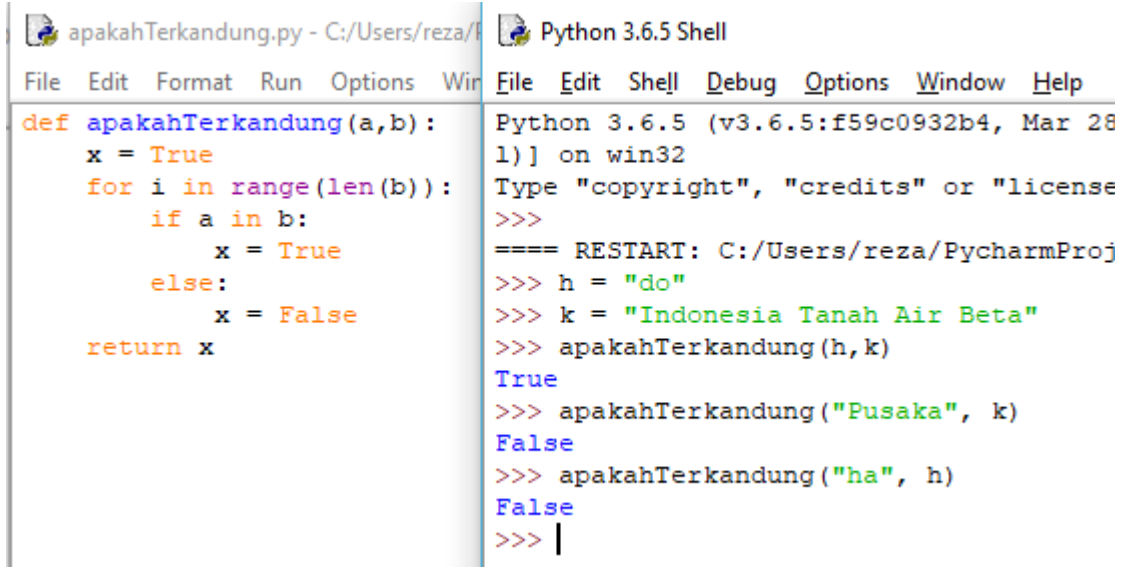


The screenshot shows a PyCharm IDE window with a file named 'faktorPrima.py'. The code defines a function 'faktorPrima(a)' that returns a list of prime factors. The execution console on the right shows the results of calling this function with values 10, 200, and 29.

```
faktorPrima.py - C:\Users\reza\PycharmProjects\AlgoStruk
File Edit Format Run Options Window Help
def faktorPrima(a):
    bilanganList=[]
    loop = 2
    while loop <=a:
        if a%loop==0:
            a/=loop
            bilanganList.append(loop)
        else:
            loop+=1
    return bilanganList

===== RESTART: C:\Users\reza\
>>> faktorPrima(10)
[2, 5]
>>> faktorPrima(200)
[2, 2, 2, 5, 5]
>>> faktorPrima(29)
[29]
>>>
```

Nomor 8

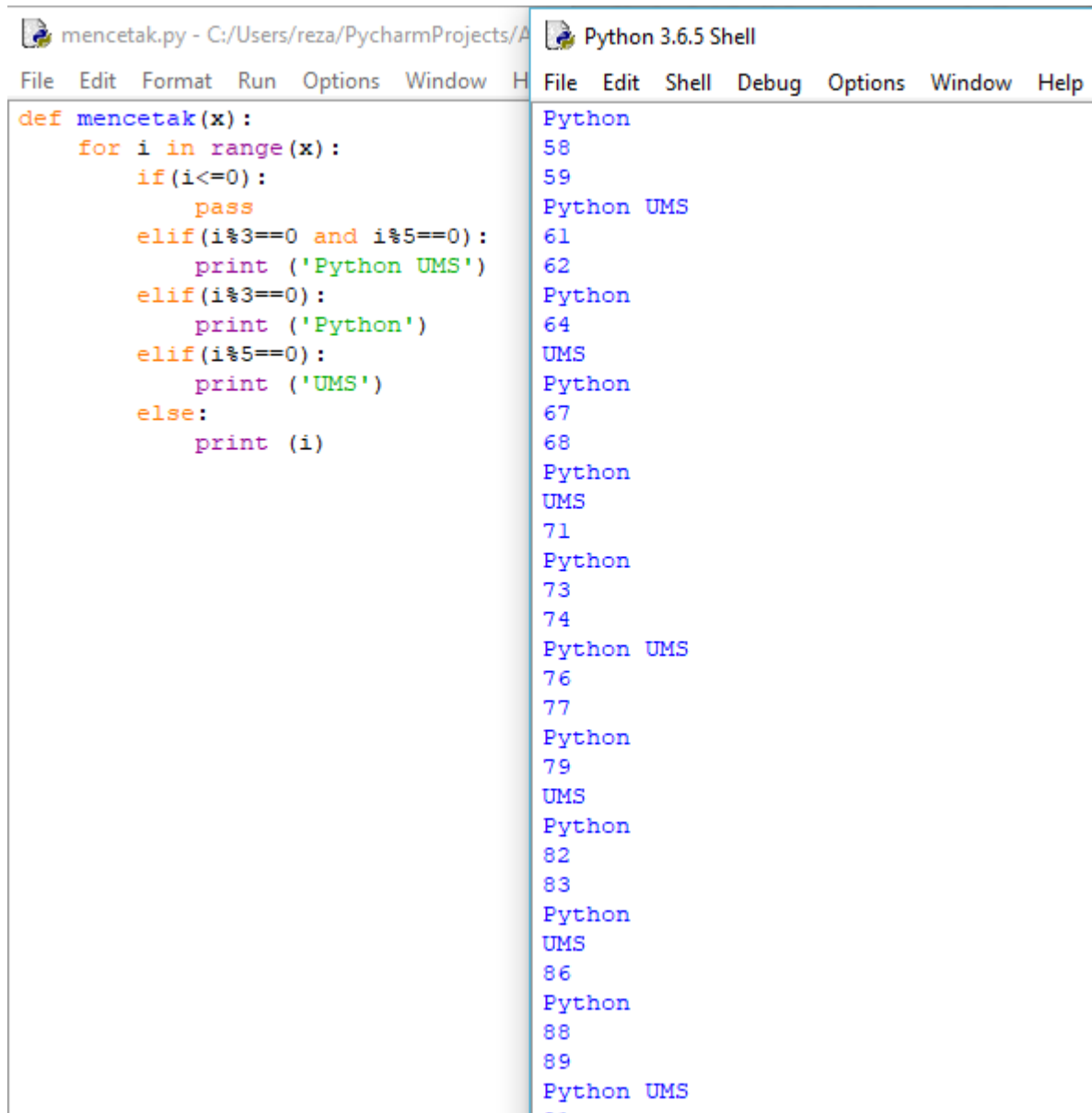


The screenshot shows a PyCharm IDE window with a file named 'apakahTerkandung.py'. The code defines a function 'apakahTerkandung(a,b)' that checks if string 'a' is a substring of string 'b'. The execution console on the right shows the results of calling this function with various inputs.

```
apakahTerkandung.py - C:/Users/reza/Python 3.6.5 Shell
File Edit Format Run Options Window Help
def apakahTerkandung(a,b):
    x = True
    for i in range(len(b)):
        if a in b:
            x = True
        else:
            x = False
    return x

Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28
1)] on win32
Type "copyright", "credits" or "license
>>>
===== RESTART: C:/Users/reza/PycharmProj
>>> h = "do"
>>> k = "Indonesia Tanah Air Beta"
>>> apakahTerkandung(h,k)
True
>>> apakahTerkandung("Pusaka", k)
False
>>> apakahTerkandung("ha", h)
False
>>> |
```

Nomor 9



The image shows a PyCharm IDE window with two panes. The left pane displays a Python script named `mencetak.py` located at `C:/Users/reza/PycharmProjects/A`. The script defines a function `mencetak(x)` that iterates over a range of `x` values. For each value `i`, it checks if `i` is less than or equal to 0 (pass), if `i` is divisible by both 3 and 5 (print 'Python UMS'), if `i` is divisible by 3 (print 'Python'), if `i` is divisible by 5 (print 'UMS'), or if none of these conditions are met (print `i`).

The right pane shows the output of the script in a 'Python 3.6.5 Shell' window. The output consists of a series of lines, each preceded by a line number (58 to 89). The lines alternate between 'Python', 'UMS', and the value of `i` (58, 59, 61, 62, 64, 67, 68, 71, 73, 74, 76, 77, 79, 82, 83, 86, 88, 89).

```
def mencetak(x):  
    for i in range(x):  
        if i<=0:  
            pass  
        elif i%3==0 and i%5==0:  
            print ('Python UMS')  
        elif i%3==0:  
            print ('Python')  
        elif i%5==0:  
            print ('UMS')  
        else:  
            print (i)
```

Python
58
59
Python UMS
61
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

Nomor 10

The screenshot shows a Python IDE with two windows. The left window is a file named 'selesaikanABC.py' located at 'C:/Users/reza/PycharmProjects/Algo'. It contains a function 'selesaikanABC(a,b,c)' that calculates the roots of a quadratic equation $ax^2 + bx + c = 0$. The function uses the quadratic formula and checks for a negative discriminant. The right window is a 'Python 3.6.5 Shell' showing the execution of the function with test cases: `selesaikanABC(2,6,8)` and `selesaikanABC(10,20,30)`, both returning the message 'Determinannya negatif, persamaan tidak mempunyai akar real.'

```

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

```

```

Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.111] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/reza/PycharmProjects/AlgoStruk/selesaika
>>> selesaikanABC(2,6,8)
'Determinannya negatif, persamaan tidak mempunyai akar real.'
>>> selesaikanABC(10,20,30)
'Determinannya negatif, persamaan tidak mempunyai akar real.'
>>>

```

Nomor 11

The screenshot shows a Python IDE with two windows. The left window is a file named 'tahunKabisat.py' located at 'C:/Users/reza/PycharmProjects/AlgoStruk/tahunKabisat.py'. It contains a function 'tahunKabisat(tahun)' that checks if a year is a leap year based on divisibility rules. The right window is a 'Python 3.6.5 Shell' showing the execution of the function with test cases: `tahunKabisat(2000)`, `tahunKabisat(1945)`, and `tahunKabisat(2025)`, returning 'True', 'False', and 'False' respectively.

```

def tahunKabisat(tahun):
    hasil = False
    if(tahun%4==0 and tahun%100!=0 and tahun%400!=0):
        hasil = True
    elif(tahun%100==0 and tahun%400!=0):
        hasil = False
    elif(tahun%400==0):
        hasil = True
    else:
        hasil = False
    return hasil

```

```

Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.111] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/reza/PycharmProjects/AlgoStruk/tahunKabisat.py
>>> tahunKabisat(2000)
True
>>> tahunKabisat(1945)
False
>>> tahunKabisat(2025)
False
>>>

```

Nomor 12

The screenshot shows a Python IDE with two windows. The left window is a file named 'tebak.py' located at 'C:/Users/reza/AppData/Local/Programs/Python/Python36-32/tebak.py'. It contains a function 'tebak()' that generates a random number and prompts the user to guess it. The right window is a 'Python 3.6.5 Shell' showing the execution of the function, where the user guesses the number 16, 17, 86, 85, and 26, receiving feedback until the correct number is guessed.

```

import random
def tebak():
    a = random.randrange(1,101,1)
    b = -1
    n = 0
    print ("Tebak Angka")
    while a!=b:
        n=n+1
        b=int(input("Masukkan Angka ke- " +str(n)+"> "))
        if b<a:
            print ("Terlalu Kecil")
        elif b>a:
            print ("Terlalu Besar")
        else:
            print ("Benar")
            break

```

```

Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.111] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/reza/AppData/Local/Programs/Python/Python36-32/tebak.py
>>> tebak()
Tebak Angka
Masukkan Angka ke- 1:> 16
Terlalu Kecil
Masukkan Angka ke- 2:> 17
Terlalu Kecil
Masukkan Angka ke- 3:> 86
Terlalu Besar
Masukkan Angka ke- 4:> 85
Terlalu Besar
Masukkan Angka ke- 5:> 26
Benar
>>>

```

Nomor 13

say.py - C:/Users/reza/AppData/Local/Programs/Python/Python36-32/say.py (3.6.5)
File Edit Format Run Options Window Help

```
def say(bilangan):
    angka=['','Satu','Dua','Tiga','Empat','Lima','Enam','Tujuh','Delapan','Sembilan','Sepuluh','Belas']
    Hasil = ''
    n = int(bilangan)
    if (n >= 0 and n <= 11):
        Hasil = Hasil + angka[n]
    elif (n < 20):
        Hasil = say(n % 10) + ' Belas'
    elif (n < 100):
        Hasil = say(n / 10) + ' Puluh' + say(n % 10)
    elif (n < 200):
        Hasil = ' Seratus' + say(n-100)
    elif (n < 1000):
        Hasil = say(n / 100) + ' Ratus' + say(n % 100)
    elif (n < 2000):
        Hasil = ' Seribu' + say(n-1000)
    elif (n < 10000):
        Hasil = say(n / 1000) + ' Ribu' + say(n % 1000)
    elif (n < 20000):
        Hasil = ' Sepuluh Ribu' + say(n-10000)
    elif (n < 100000):
        Hasil = say(n / 10000) + ' Puluh' + say(n % 10000)
    elif (n < 200000):
        Hasil = ' Seratus' + say(n-100000)
    elif (n < 1000000):
        Hasil = say(n / 100000) + ' Ratus' + say(n % 100000)
    elif (n < 2000000):
        Hasil = ' Satu Juta' + say(n-1000000)
    elif (n < 10000000):
        Hasil = say(n / 1000000) + ' Juta' + say(n % 1000000)
    elif (n < 100000000):
        Hasil = ' Satu Miliar' + say(n % 100000000)
    else:
        Hasil = 'Angka hanya sampai satu miliar'
    return Hasil
```

Python 3.6.5 Shell
File Edit Shell Debug Options Window Help

```
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:11) on win32
Type "copyright", "credits" or "license()" for more :
>>>
== RESTART: C:/Users/reza/AppData/Local/Programs/Python/Python36-32/Python36-32/python.exe
>>> say(315000)
Traceback (most recent call last):
  File "<pyshell#0>", line 1, in <module>
    say(315000)
  File "C:/Users/reza/AppData/Local/Programs/Python/Python36-32/Python36-32/python.exe", in say
    Hasil = Terbilang(n / 100000) + ' Ratus' + Terbilang(n % 100000)
NameError: name 'Terbilang' is not defined
>>>
== RESTART: C:/Users/reza/AppData/Local/Programs/Python/Python36-32/Python36-32/python.exe
>>> say(315000)
' Tiga Ratus Sepuluh Ribu Lima Ribu '
>>> say(9856000)
' Sembilan Juta Delapan Ratus Lima Puluh Enam Ribu '
>>> |
```

Nomor 14

formatRupiah.py - C:/Users/reza/AppData/Local/Programs/Python/Python36-32/formatRupiah.py (3.6.5)
File Edit Format Run Options Window Help

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

Python 3.6.5 Shell
File Edit Shell Debug Options Window Help

```
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:11) on win32
Type "copyright", "credits" or "license()" for more :
>>>
== RESTART: C:/Users/reza/AppData/Local/Programs/Python/Python36-32/Python36-32/python.exe
>>> formatRupiah(9000)
'Rp 9.000'
>>> formatRupiah(8000000)
'Rp 8.000.000'
>>> formatRupiah(145500000000)
'Rp 145.500.000.000'
>>> |
```