

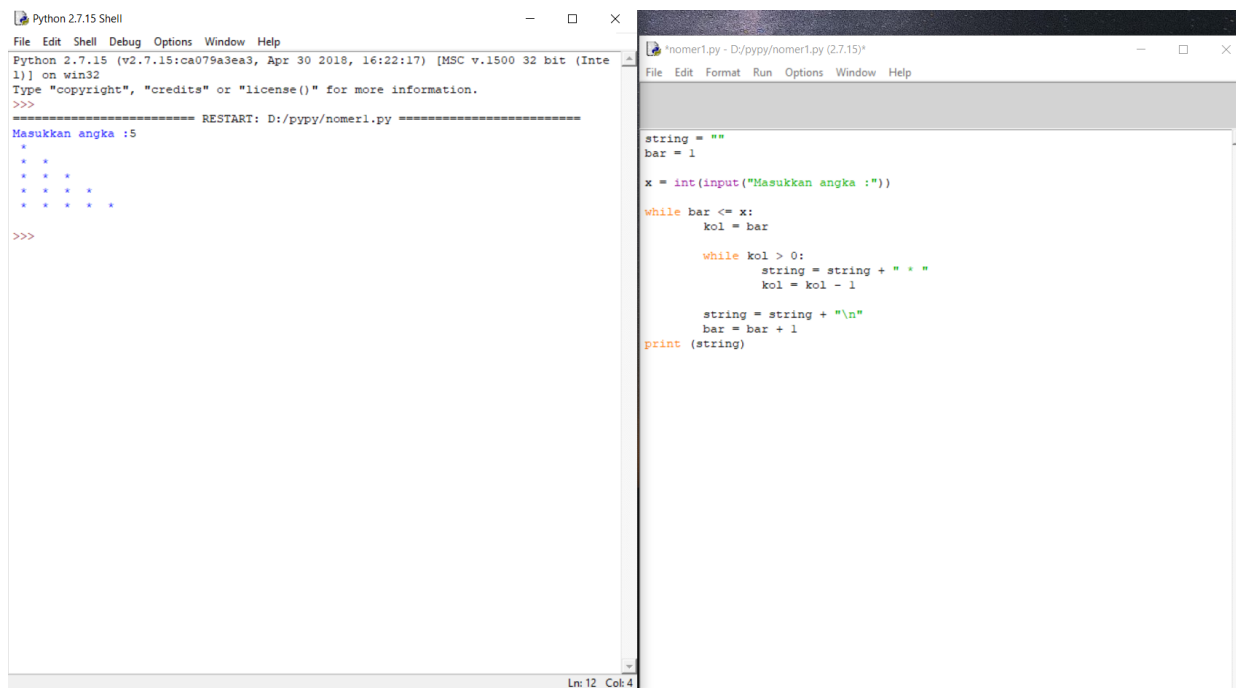
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Kelas : Praktikum Algoritma dan Struktur Data H

Modul 1

Nomer 1



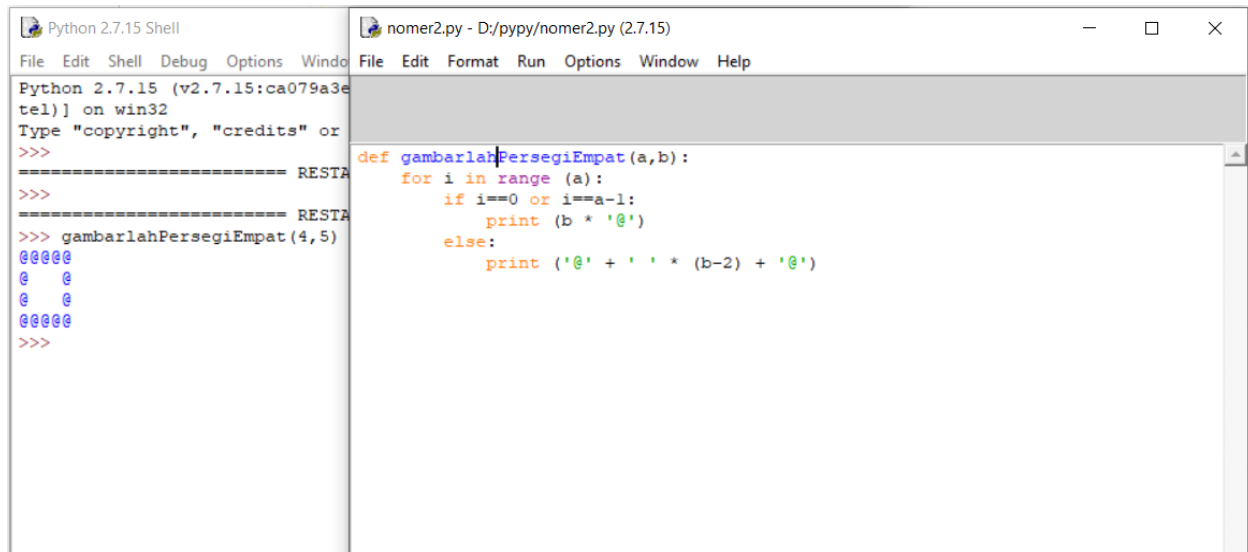
The image displays two side-by-side screenshots of a Python environment. The left screenshot shows a Python 2.7.15 Shell window with the following text:

```
Python 2.7.15 Shell
File Edit Shell Debug Options Window Help
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/pypy/nomer1.py =====
Masukkan angka :5
*
* *
* * *
* * * *
* * * * *
>>>
```

The right screenshot shows a Python IDE window titled "nomer1.py - D:/pypy/nomer1.py (2.7.15)". The code in the IDE is as follows:

```
string = ""
bar = 1
x = int(input("Masukkan angka :"))
while bar <= x:
    kol = bar
    while kol > 0:
        string = string + " * "
        kol = kol - 1
    string = string + "\n"
    bar = bar + 1
print (string)
```

Nomer 2



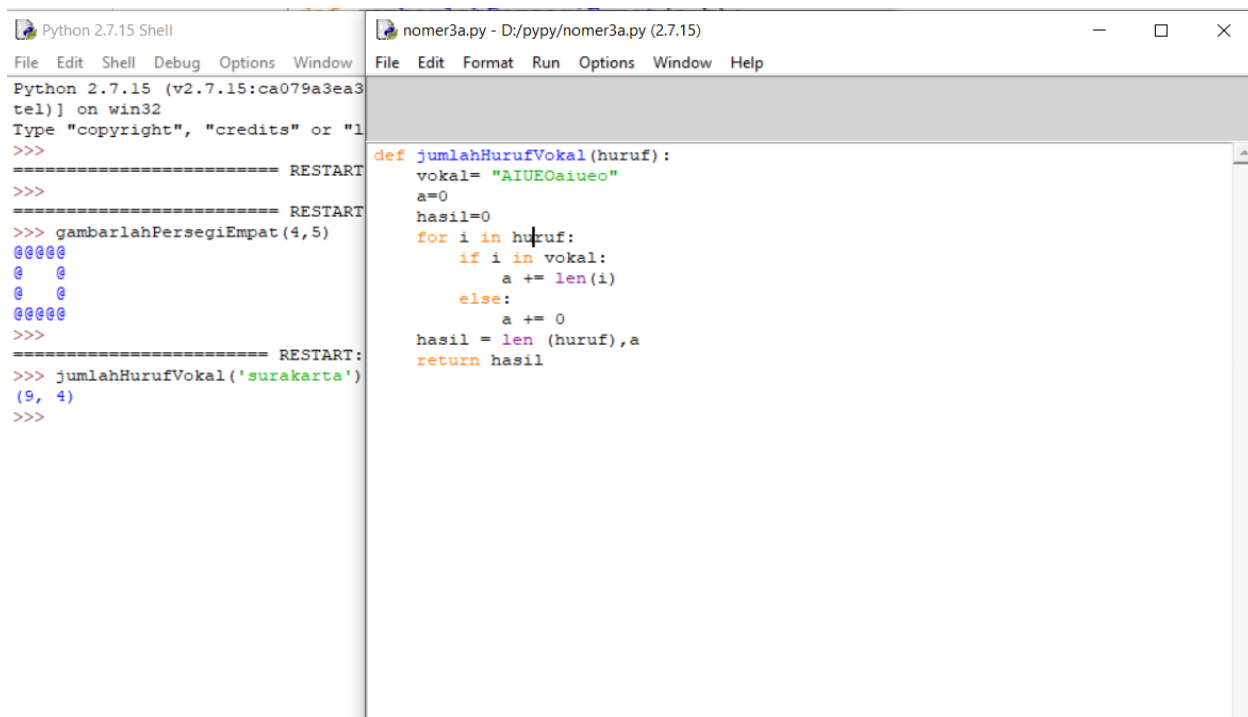
The image shows two windows from a Python 2.7.15 environment. The left window is a shell with the following code and output:

```
Python 2.7.15 (v2.7.15:ca079a3e3tel) on win32
Type "copyright", "credits" or "1"
>>>
===== RESTART:
>>>
===== RESTART:
>>> gambarlahPersegiEmpat(4,5)
@@@@@
@  @
@  @
@@@@@
>>>
```

The right window shows the script `nomer2.py` with the following code:

```
def gambarlahPersegiEmpat(a,b):
    for i in range(a):
        if i==0 or i==a-1:
            print(b * '@')
        else:
            print('@' + ' ' * (b-2) + '@')
```

Nomer 3A



The image shows two windows from a Python 2.7.15 environment. The left window is a shell with the following code and output:

```
Python 2.7.15 (v2.7.15:ca079a3e3tel) on win32
Type "copyright", "credits" or "1"
>>>
===== RESTART:
>>>
===== RESTART:
>>> gambarlahPersegiEmpat(4,5)
@@@@@
@  @
@  @
@@@@@
>>>
===== RESTART:
>>> jumlahHurufVokal('surakarta')
(9, 4)
>>>
```

The right window shows the script `nomer3a.py` with the following code:

```
def jumlahHurufVokal(huruf):
    vokal= "AIUEOaiueo"
    a=0
    hasil=0
    for i in huruf:
        if i in vokal:
            a += len(i)
        else:
            a += 0
    hasil = len(huruf),a
    return hasil
```

Nomer 3B

```
Python 2.7.15 Shell
File Edit Shell Debug Options Window Help
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 10 2015) on win32
Type "copyright", "credits" or "license()" for more
>>>
===== RESTART: D:\Python27\Python27\Python Shell >>>
>>>
===== RESTART: D:\Python27\Python27\Python Shell >>>
>>> gambarlahPersegiEmpat(4,5)
00000
0 0
0 0
00000
>>>
===== RESTART: D:\Python27\Python27\Python Shell >>>
>>> jumlahHurufVokal('surakarta')
(9, 4)
>>>
===== RESTART: D:\Python27\Python27\Python Shell >>>
>>> jumlahHurufKonsonan('surakarta')
(9, 5)
>>>
```

```
nomer3b.py - D:\pypy\nomer3b.py (2.7.15)
File Edit Format Run Options Window Help
def jumlahHurufKonsonan(huruf):
    konsonan = "BCDFGHJKLMNPQRSTVWXYZbcd fghjklmnpqrstvwxyz"
    b = 0
    hasil = 0
    for i in huruf:
        if i in konsonan:
            b += len(i)
        else:
            b += 0
    hasil = len(huruf), b
    return hasil
```

Nomer 4

```
>>>
===== RESTART: D:\Python27\Python27\Python Shell >>>
>>> rerata([1,2,3,4,5])
3
>>> g=[3,4,5,4,3,4,5,2,2,10,11,23]
>>> rerata(g)
6
>>>
```

```
def rerata(b):
    return sum(b)/len(b)
```

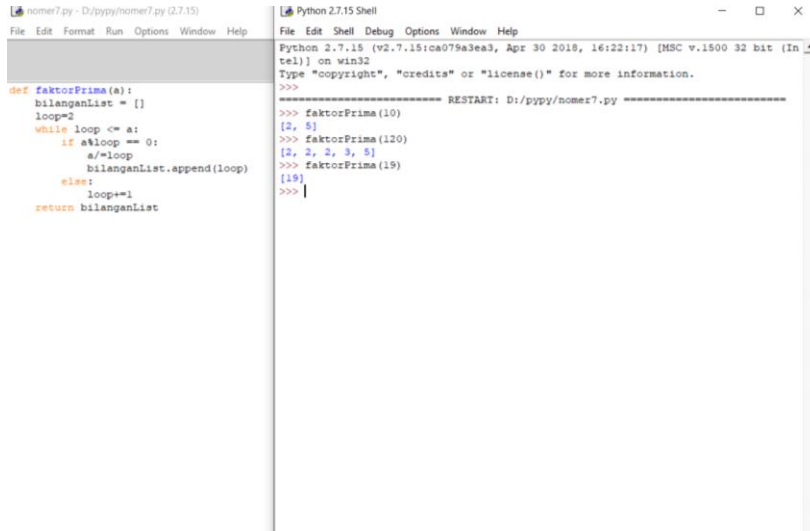
Nomer 5

<pre>nomer5.py - D:/pypy/nomer5.py (2.7.15) 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</pre>	<pre>Python 2.7.15 Shell File Edit Shell Debug Options Window Help Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32 Type "copyright", "credits" or "license()" for more information. >>> ===== RESTART: D:/pypy/nomer5.py ===== >>> apakahPrima(17) True >>> apakahPrima(97) True >>> apakahPrima(123) False >>></pre>
---	--

Nomer 6

<pre>nomer6.py - D:/pypy/nomer6.py (2.7.15) File Edit Format Run Options Window Help def bilanganPrima(n): for i in range(2,n): prima = True for j in range(2,i): if (i%j==0): prima = False if (prima): print(i)</pre>	<pre>Python 2.7.15 Shell File Edit Shell Debug Options Window Help Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32 Type "copyright", "credits" or "license()" for more information. >>> ===== RESTART: D:/pypy/nomer6.py ===== >>> bilanganPrima(1000) 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131 137 139</pre>
--	---

Nomer 7



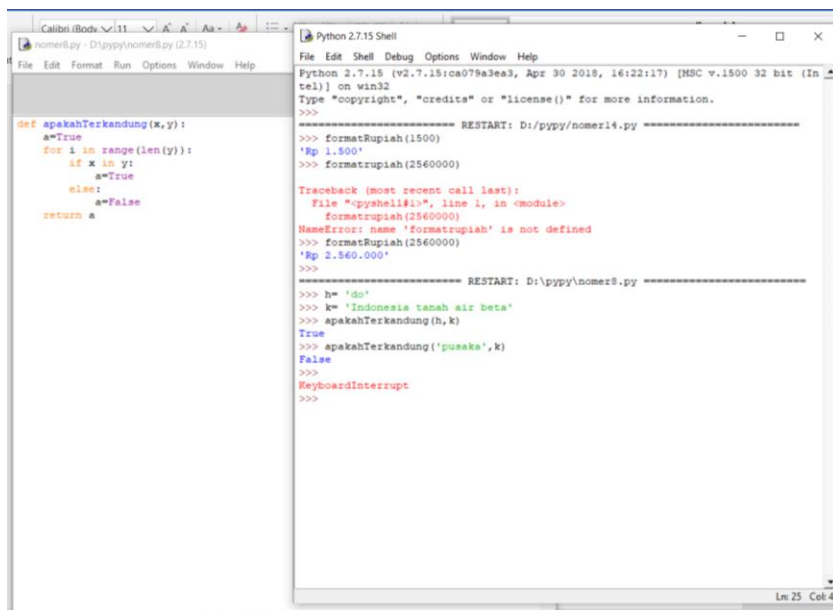
The screenshot shows a Python IDE with two windows. The left window, titled 'nomer7.py - D:\pppy\nomer7.py (2.7.15)', contains the following code:

```
def faktorPrima(a):
    bilanganList = []
    loop=2
    while loop <= a:
        if a%loop == 0:
            a/=loop
            bilanganList.append(loop)
        else:
            loop+=1
    return bilanganList
```

The right window, titled 'Python 2.7.15 Shell', shows the execution of the program. It displays the Python version and a restart message. The user has entered several test cases, and the program has returned the correct prime factor lists:

```
>>> faktorPrima(10)
[2, 5]
>>> faktorPrima(120)
[2, 2, 2, 3, 5]
>>> faktorPrima(19)
[19]
```

Nomer 8



The screenshot shows a Python IDE with two windows. The left window, titled 'nomer8.py - D:\pppy\nomer8.py (2.7.15)', contains the following code:

```
def apakahTerbilang(x,y):
    a=True
    for i in range(len(y)):
        if x in y:
            a=True
        else:
            a=False
    return a
```

The right window, titled 'Python 2.7.15 Shell', shows the execution of the program. It displays the Python version and a restart message. The user has entered several test cases, and the program has returned the correct results:

```
>>> formatRupiah(1500)
'Rp 1.500'
>>> formatRupiah(2560000)
'Rp 2.560.000'

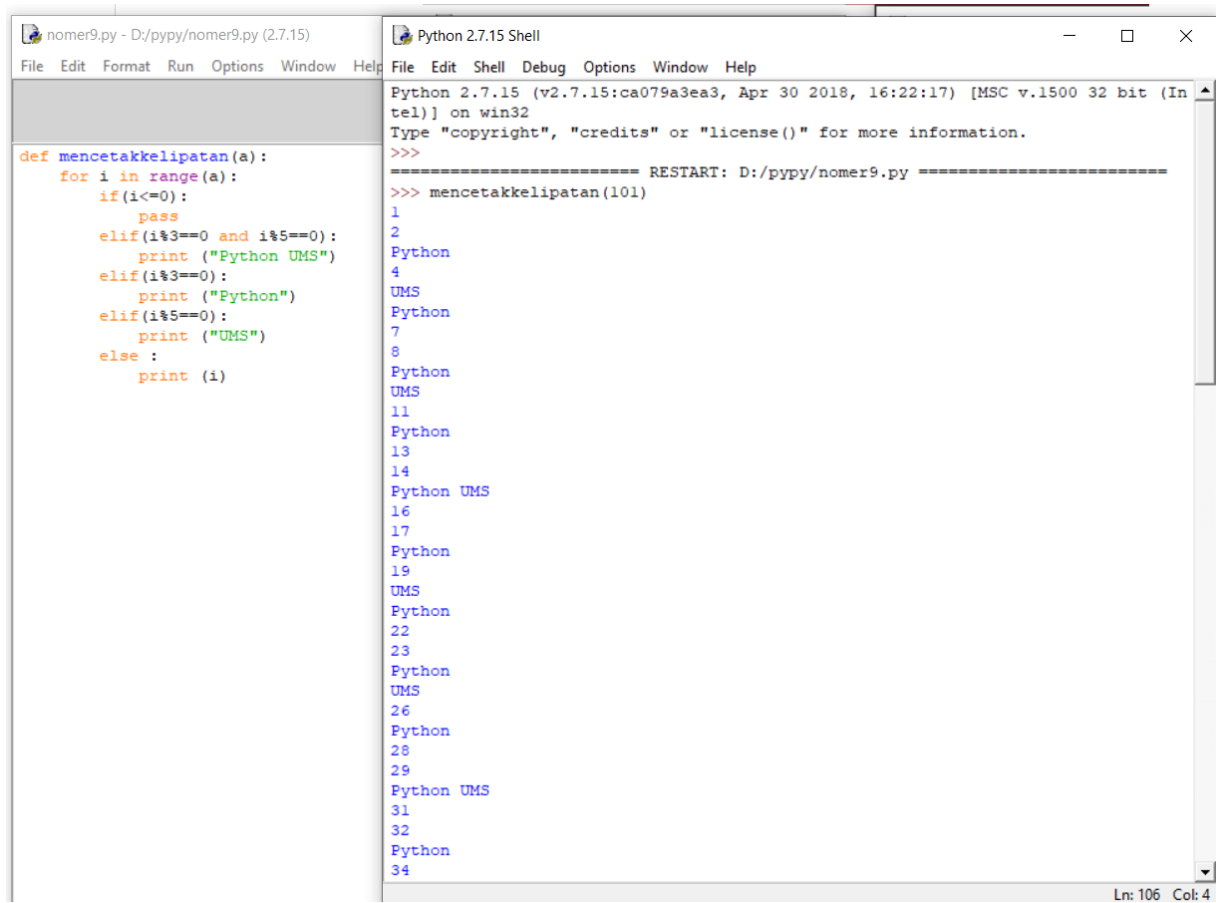
Traceback (most recent call last):
  File "<pyshell#1>", line 1, in <module>
    formatRupiah(2560000)
NameError: name 'formatRupiah' is not defined

>>> formatRupiah(2560000)
'Rp 2.560.000'

>>>

>>> h= 'da'
>>> k= 'Indonesia tanah air beta'
>>> apakahTerbilang(h,k)
True
>>> apakahTerbilang('pusaka',k)
False
>>>
KeyboardInterrupt
>>>
```

Nomer 9

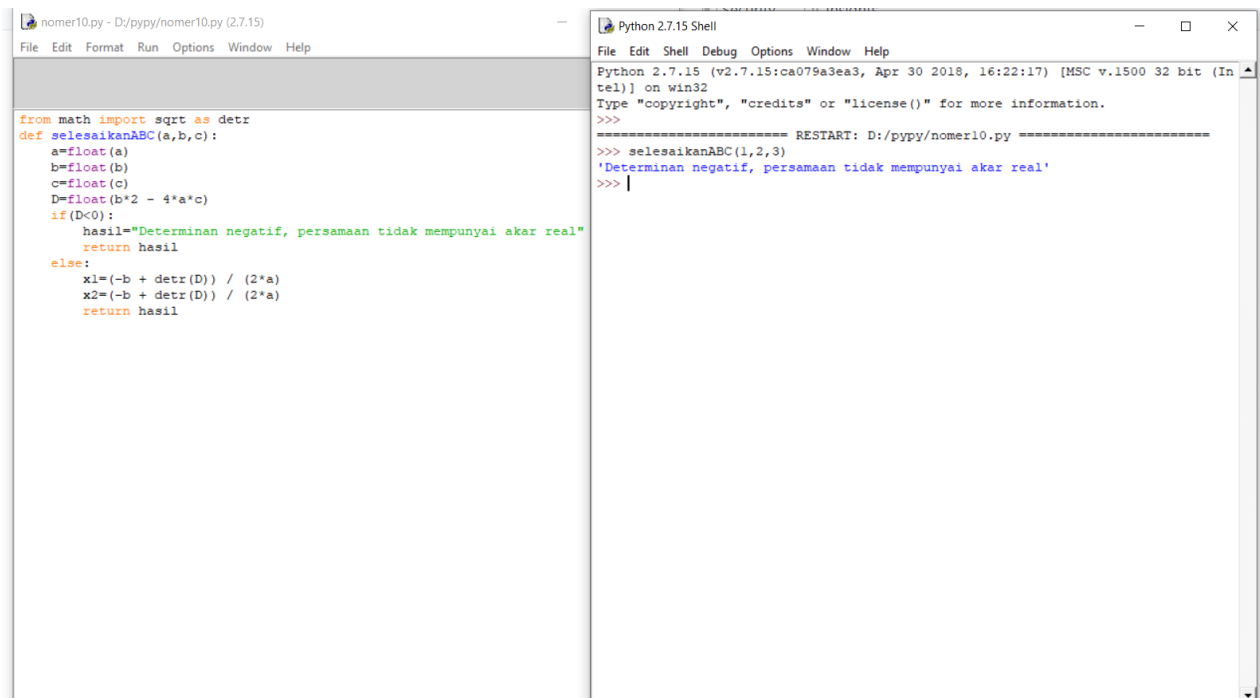


```
nomer9.py - D:/pypy/nomer9.py (2.7.15)
File Edit Format Run Options Window Help

def mencetakkelipatan(a):
    for i in range(a):
        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 2.7.15 Shell
File Edit Shell Debug Options Window Help
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/pypy/nomer9.py =====
>>> mencetakkelipatan(101)
1
2
Python
4
UMS
Python
7
8
Python
UMS
11
Python
13
14
Python UMS
16
17
Python
19
UMS
Python
22
23
Python
UMS
26
Python
28
29
Python UMS
31
32
Python
34
Ln: 106 Col: 4
```

Nomer 10



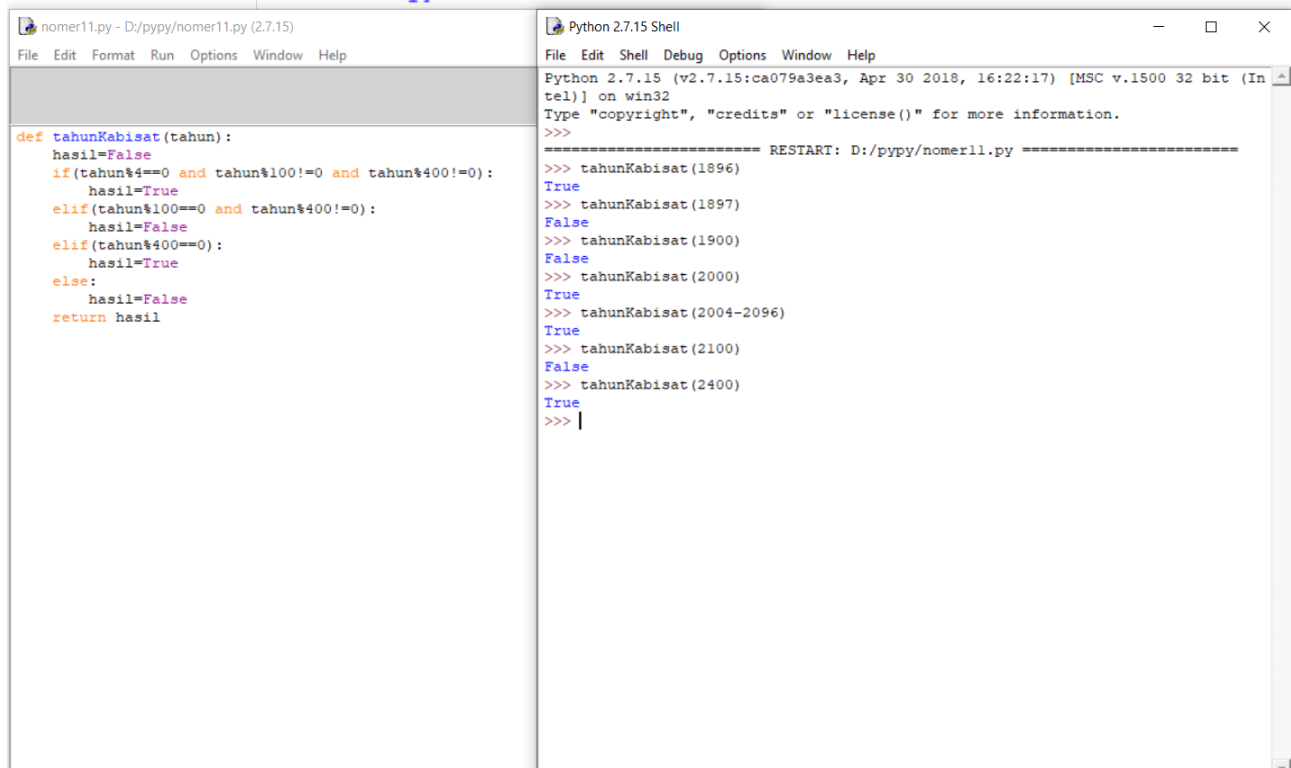
The image shows a Python IDE with two windows. The left window, titled 'nomer10.py - D:/pypy/nomer10.py (2.7.15)', contains a Python script for solving quadratic equations. The script defines a function 'selesaikanABC(a,b,c)' that calculates the discriminant 'D' and returns either the two real roots or a message indicating no real roots exist. The right window, titled 'Python 2.7.15 Shell', shows the execution of the script with the arguments (1, 2, 3), resulting in the message: 'Determinan negatif, persamaan tidak mempunyai akar real'.

```
from math import sqrt as detr
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="Determinan negatif, persamaan tidak mempunyai akar real"
        return hasil
    else:
        x1=(-b + detr(D)) / (2*a)
        x2=(-b + detr(D)) / (2*a)
        return hasil
```

```
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/pypy/nomer10.py =====
>>> selesaikanABC(1,2,3)
'Determinan negatif, persamaan tidak mempunyai akar real'
>>> |
```

Nomer 11

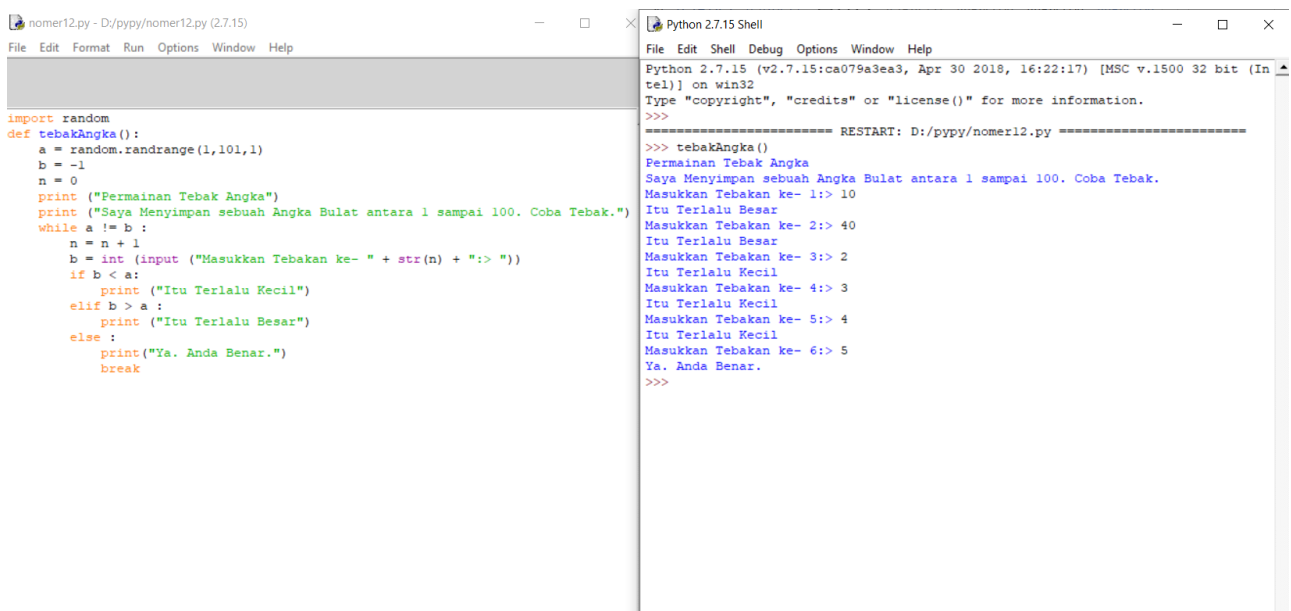
14



```
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

>>> tahunKabisat(1896)
True
>>> tahunKabisat(1897)
False
>>> tahunKabisat(1900)
False
>>> tahunKabisat(2000)
True
>>> tahunKabisat(2004-2096)
True
>>> tahunKabisat(2100)
False
>>> tahunKabisat(2400)
True
>>> |
```

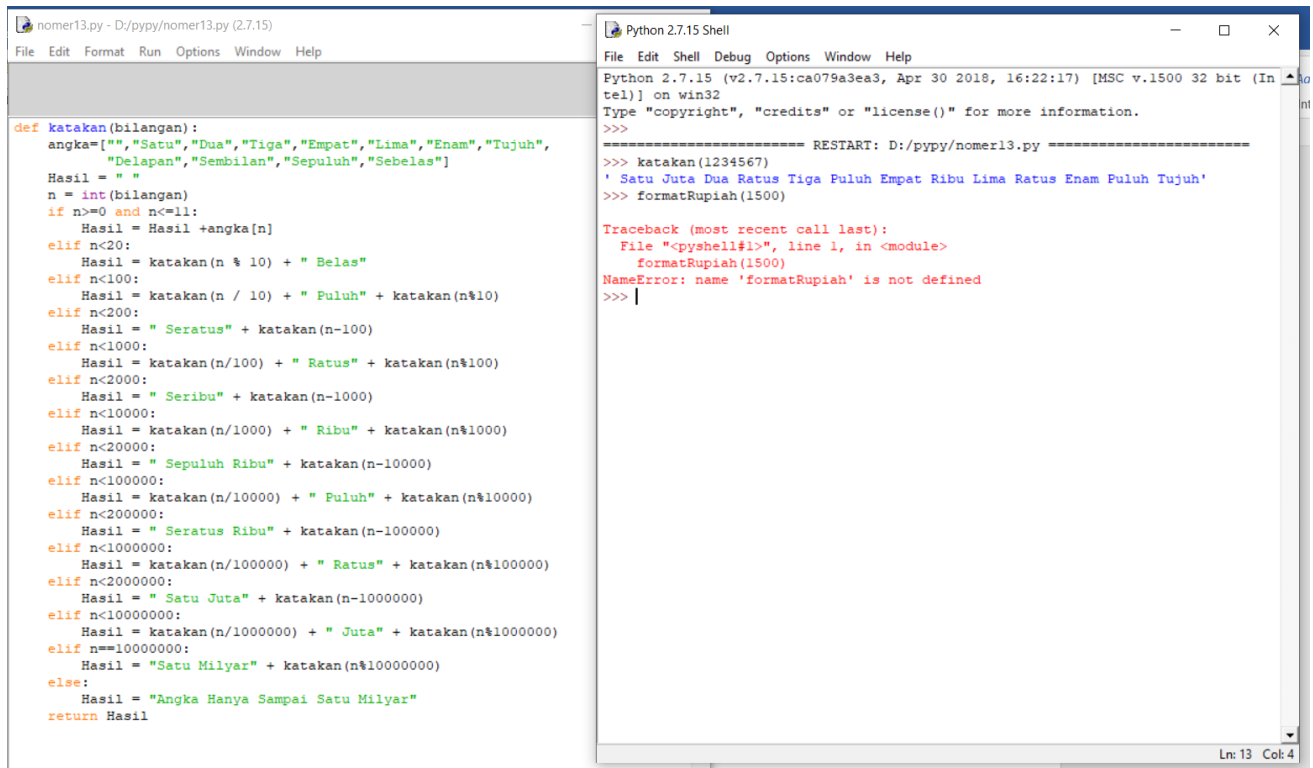
Nomer 12



```
import random
def tebakAngka():
    a = random.randrange(1,101,1)
    b = -1
    n = 0
    print ("Permainan Tebak Angka")
    print ("Saya Menyimpan sebuah Angka Bulat antara 1 sampai 100. Coba Tebak.")
    while a != b :
        n = n + 1
        b = int (input ("Masukkan Tebakan ke- " + str(n) + ":> "))
        if b < a:
            print ("Itu Terlalu Kecil")
        elif b > a :
            print ("Itu Terlalu Besar")
        else :
            print("Ya. Anda Benar.")
            break

>>> tebakAngka()
Permainan Tebak Angka
Saya Menyimpan sebuah Angka Bulat antara 1 sampai 100. Coba Tebak.
Masukkan Tebakan ke- 1:> 10
Itu Terlalu Besar
Masukkan Tebakan ke- 2:> 40
Itu Terlalu Besar
Masukkan Tebakan ke- 3:> 2
Itu Terlalu Kecil
Masukkan Tebakan ke- 4:> 3
Itu Terlalu Kecil
Masukkan Tebakan ke- 5:> 4
Itu Terlalu Kecil
Masukkan Tebakan ke- 6:> 5
Ya. Anda Benar.
>>>
```


Nomer 13



```
nomer13.py - D:/pypy/nomer13.py (2.7.15)
File Edit Format Run Options Window Help

def katakan(bilangan):
    angka=["", "Satu", "Dua", "Tiga", "Empat", "Lima", "Enam", "Tujuh",
           "Delapan", "Sembilan", "Sepuluh", "Sebelas"]
    Hasil = " "
    n = int(bilangan)
    if n>=0 and n<=11:
        Hasil = 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<10000:
        Hasil = katakan(n/1000) + " Ribu" + katakan(n%1000)
    elif n<20000:
        Hasil = " Sepuluh Ribu" + katakan(n-10000)
    elif n<100000:
        Hasil = katakan(n/10000) + " Puluh" + katakan(n%10000)
    elif n<200000:
        Hasil = " Seratus Ribu" + katakan(n-100000)
    elif n<1000000:
        Hasil = katakan(n/100000) + " Ratus" + katakan(n%100000)
    elif n<2000000:
        Hasil = " Satu Juta" + katakan(n-1000000)
    elif n<10000000:
        Hasil = katakan(n/1000000) + " Juta" + katakan(n%1000000)
    elif n==10000000:
        Hasil = "Satu Milyar" + katakan(n%10000000)
    else:
        Hasil = "Angka Hanya Sampai Satu Milyar"
    return Hasil

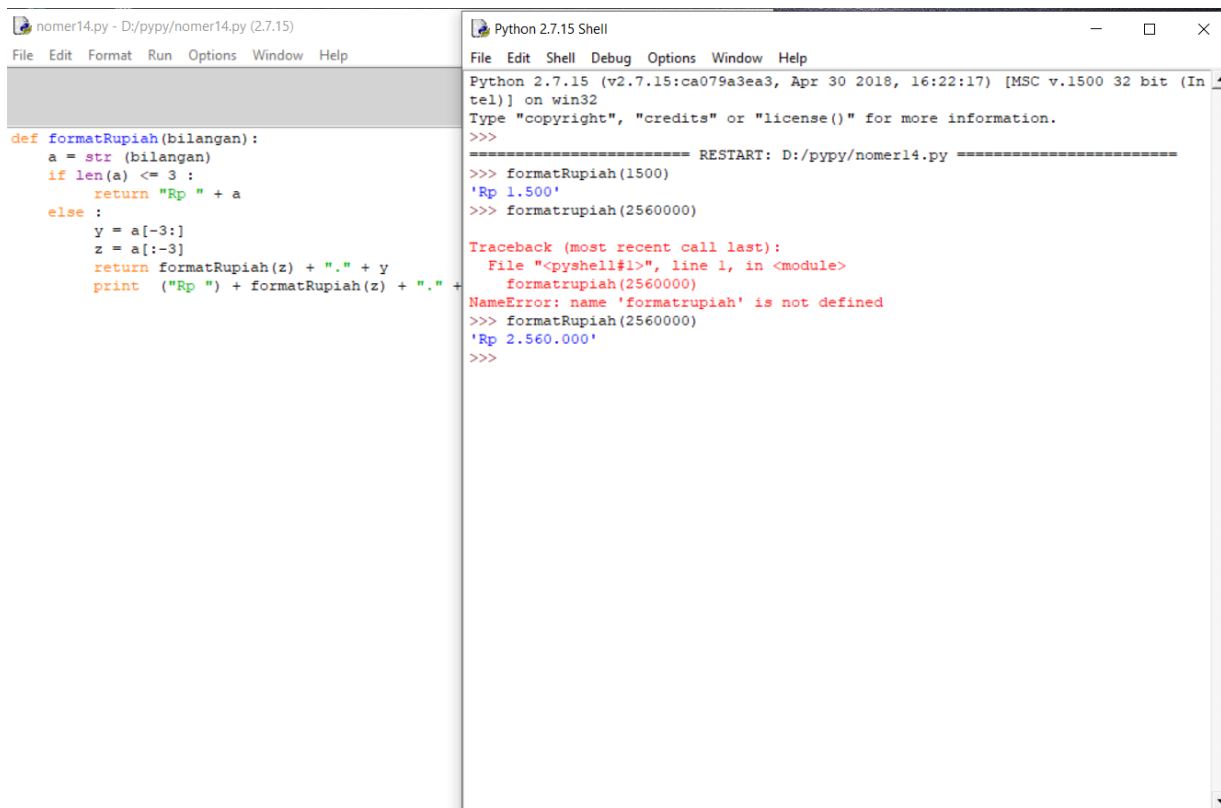
Python 2.7.15 Shell
File Edit Shell Debug Options Window Help

Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:/pypy/nomer13.py =====
>>> katakan(1234567)
' Satu Juta Dua Ratus Tiga Puluh Empat Ribu Lima Ratus Enam Puluh Tujuh'
>>> formatRupiah(1500)

Traceback (most recent call last):
  File "<pyshell#1>", line 1, in <module>
    formatRupiah(1500)
NameError: name 'formatRupiah' is not defined
>>> |
```

Ln: 13 Col: 4

Nomer 14



The image shows a Python IDE with two windows. The left window, titled 'nomer14.py - D:/pypy/nomer14.py (2.7.15)', contains the following code:

```
def formatRupiah(bilangan):  
    a = str(bilangan)  
    if len(a) <= 3 :  
        return "Rp " + a  
    else :  
        y = a[-3:]  
        z = a[:-3]  
        return formatRupiah(z) + "." + y  
    print ("Rp ") + formatRupiah(z) + "." +
```

The right window, titled 'Python 2.7.15 Shell', shows the execution of the script. It displays the Python version and architecture, followed by a restart of the script. The output shows the function being called with 1500 and 2560000, resulting in 'Rp 1.500' and 'Rp 2.560.000' respectively. A traceback error is also shown, indicating that the name 'formatrupiah' is not defined.

```
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:22:17) [MSC v.1500 32 bit (Intel)] on win32  
Type "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:/pypy/nomer14.py =====  
>>> formatRupiah(1500)  
'Rp 1.500'  
>>> formatrupiah(2560000)  
  
Traceback (most recent call last):  
  File "<pyshell#1>", line 1, in <module>  
    formatrupiah(2560000)  
NameError: name 'formatrupiah' is not defined  
>>> formatRupiah(2560000)  
'Rp 2.560.000'  
>>>
```