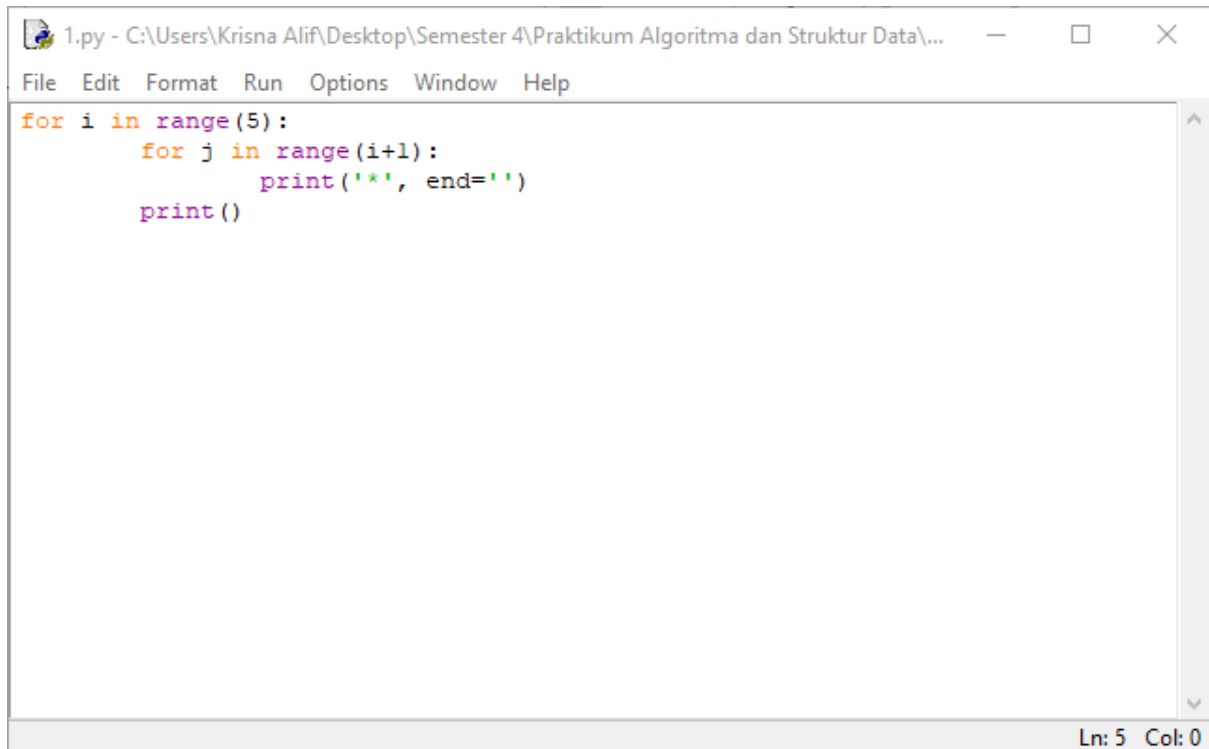


Nama : Krisna Alif Meilana

NIM : L200180028

## Modul 1

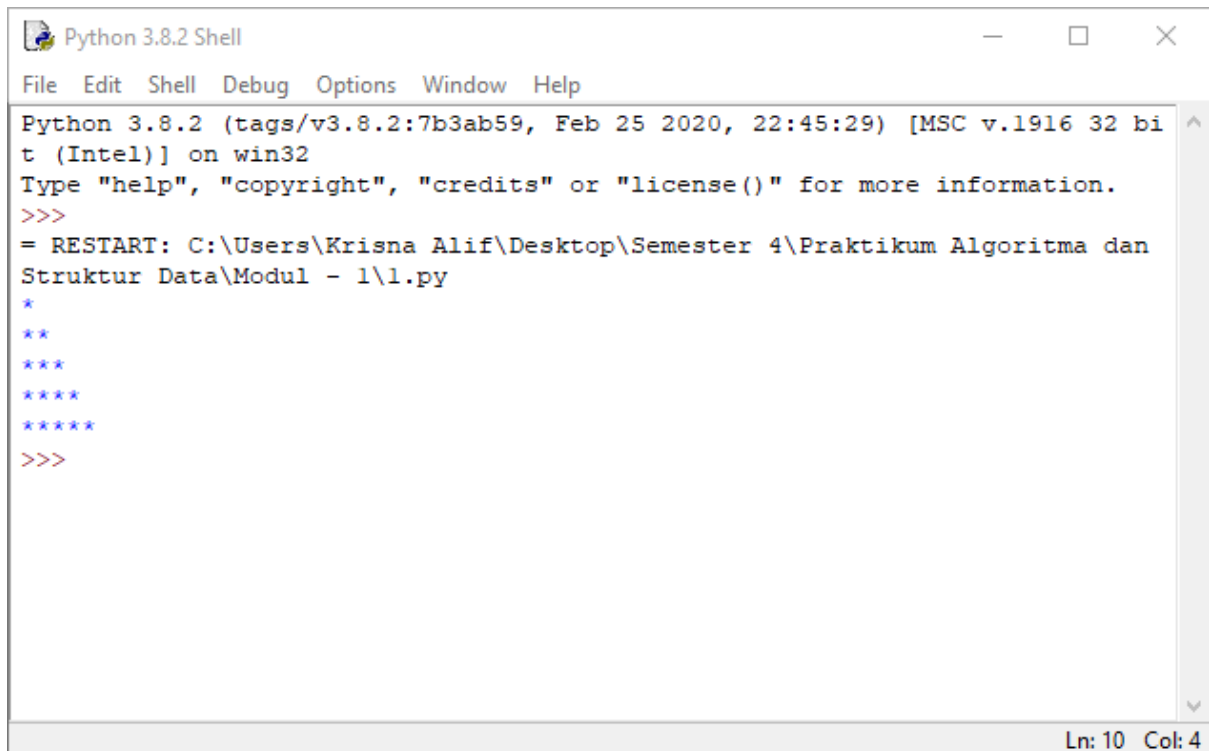
1. Buatlah fungsi cetakSiku(x)



The screenshot shows a Python IDE window titled "1.py - C:\Users\Krisna Alif\Desktop\Semester 4\Praktikum Algoritma dan Struktur Data\...". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code in the editor is as follows:

```
for i in range(5):  
    for j in range(i+1):  
        print('*', end='')  
    print()
```

The status bar at the bottom right indicates "Ln: 5 Col: 0".

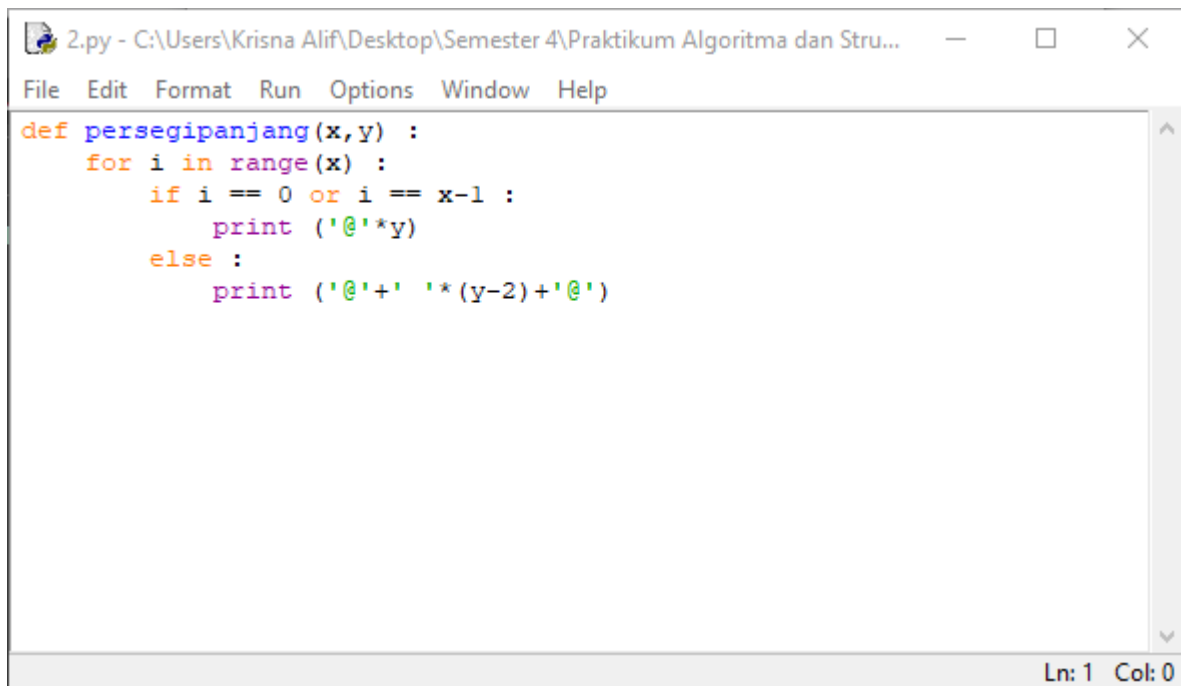


The screenshot shows a Python 3.8.2 Shell window titled "Python 3.8.2 Shell". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The output of the script is displayed in the shell:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bi  
t (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:\Users\Krisna Alif\Desktop\Semester 4\Praktikum Algoritma dan  
Struktur Data\Modul - 1\1.py  
*  
**  
***  
****  
*****  
>>>
```

The status bar at the bottom right indicates "Ln: 10 Col: 4".

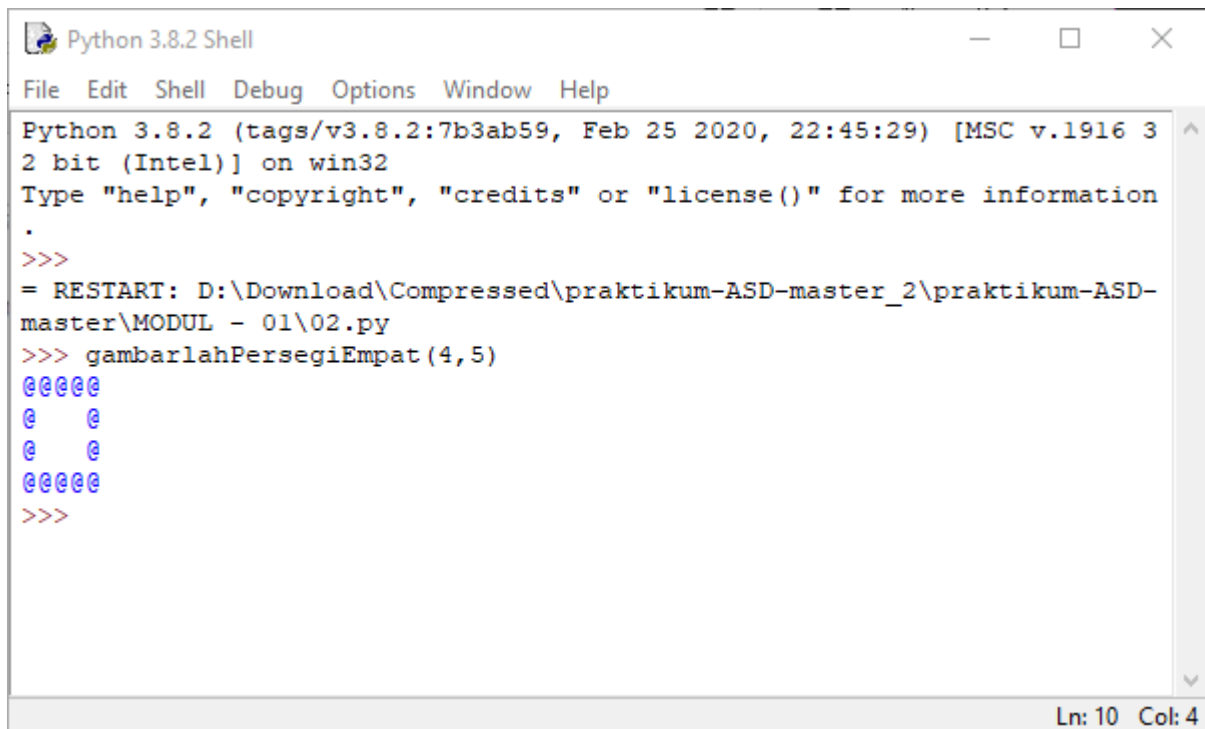
2. Buatlah fungsi yang menerima dua integer positif



The screenshot shows a Python IDE window titled "2.py - C:\Users\Krisna Alif\Desktop\Semester 4\Praktikum Algoritma dan Stru...". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code editor contains the following Python code:

```
def persegipanjang(x,y) :  
    for i in range(x) :  
        if i == 0 or i == x-1 :  
            print ('@'*y)  
        else :  
            print ('@'+ ' '*(y-2)+'@')
```

The status bar at the bottom right indicates "Ln: 1 Col: 0".

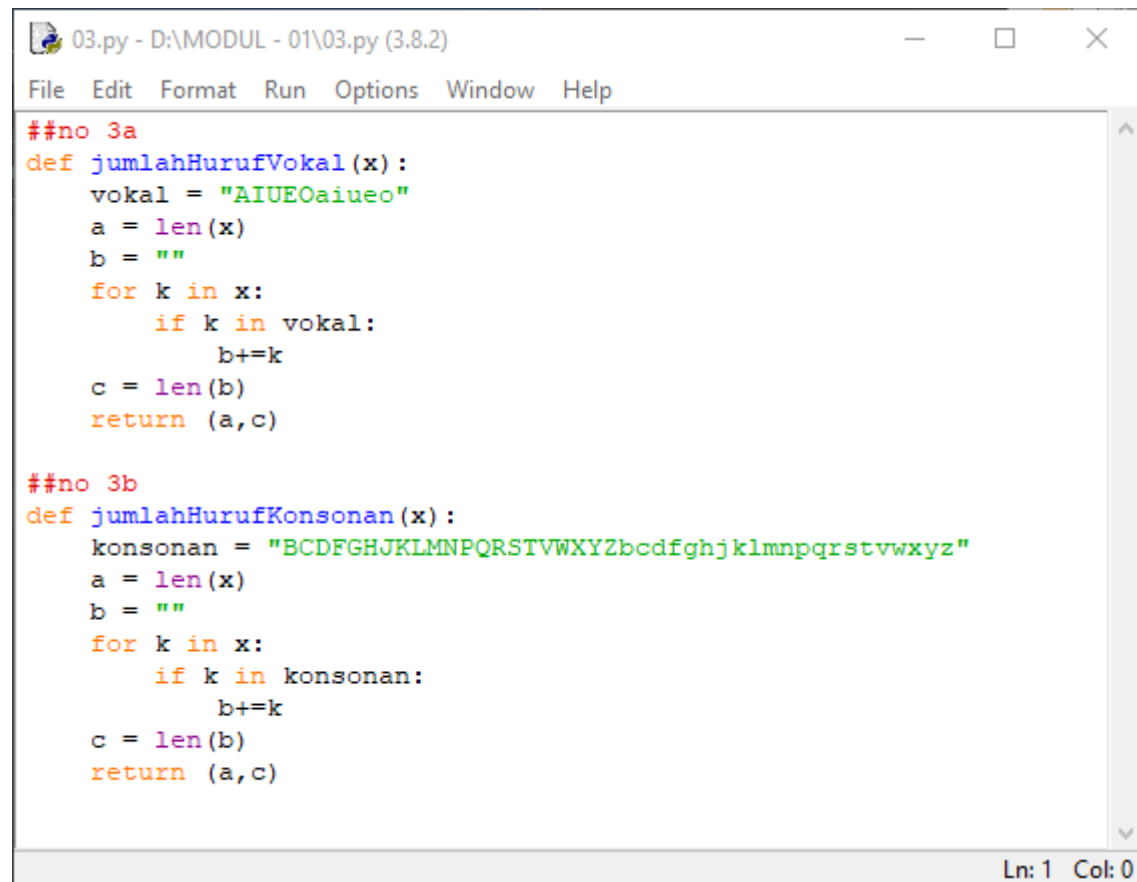


The screenshot shows a Python 3.8.2 Shell window titled "Python 3.8.2 Shell". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The output of the shell is as follows:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 3  
2 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information  
.  
>>>  
= RESTART: D:\Download\Compressed\praktikum-ASD-master_2\praktikum-ASD-  
master\MODUL - 01\02.py  
>>> gambarlahPersegiEmpat(4,5)  
@@@@@  
@  @  
@  @  
@@@@@  
>>>
```

The status bar at the bottom right indicates "Ln: 10 Col: 4".

3. Fungsi yang menerima string dan mengembalikan sebuah list dari dua integer. Yakni jumlah huruf konsonan dan vokal.

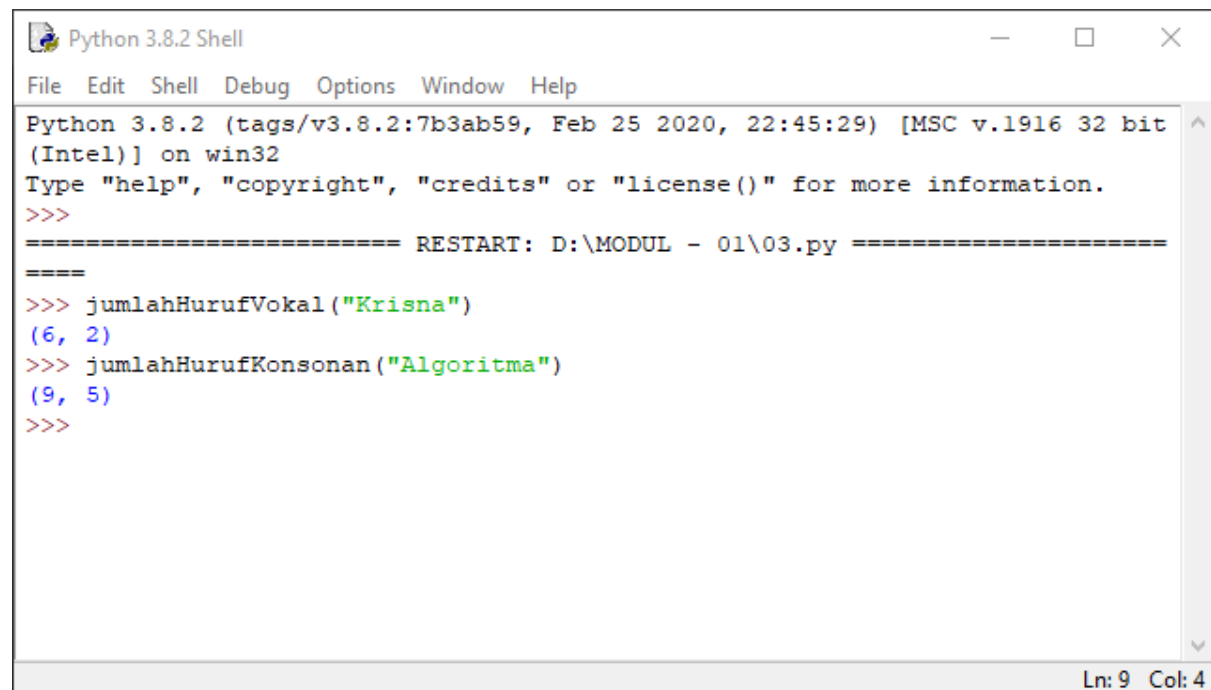


```
03.py - D:\MODUL - 01\03.py (3.8.2)
File Edit Format Run Options Window Help

##no 3a
def jumlahHurufVokal(x):
    vokal = "AIUEOaiueo"
    a = len(x)
    b = ""
    for k in x:
        if k in vokal:
            b+=k
    c = len(b)
    return (a,c)

##no 3b
def jumlahHurufKonsonan(x):
    konsonan = "BCDFGHJKLMNPQRSTVWXYZbcd fghjklmnpqrstvwxyz"
    a = len(x)
    b = ""
    for k in x:
        if k in konsonan:
            b+=k
    c = len(b)
    return (a,c)

Ln: 1 Col: 0
```

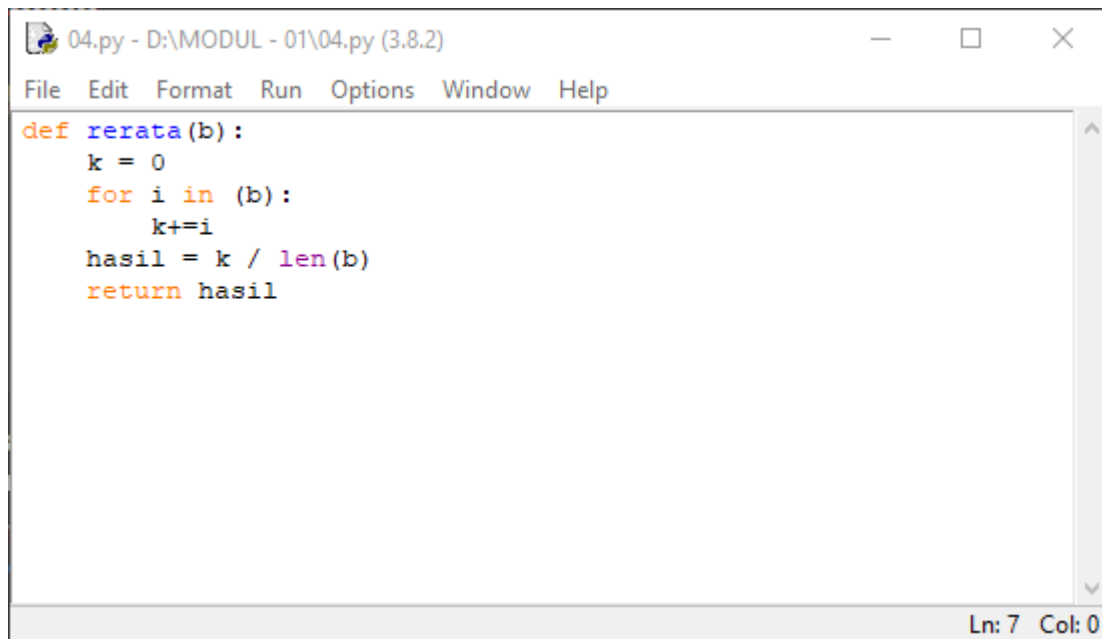


```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\03.py =====
>>> jumlahHurufVokal("Krisna")
(6, 2)
>>> jumlahHurufKonsonan("Algoritma")
(9, 5)
>>>

Ln: 9 Col: 4
```

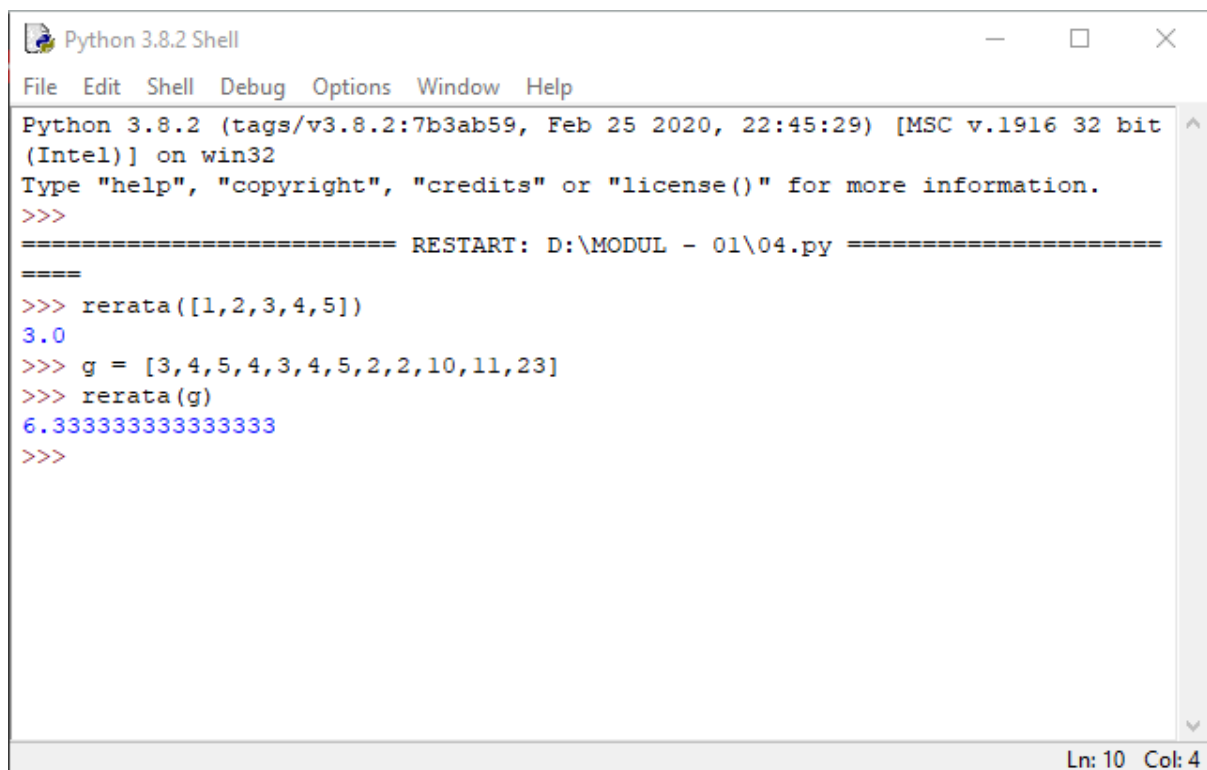
4. Buatlah sebuah fungsi yang menghitung rerata sebuah array yang berisi bilangan.



The screenshot shows a Python IDE window titled "04.py - D:\MODUL - 01\04.py (3.8.2)". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code editor contains the following Python code:

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

The status bar at the bottom right indicates "Ln: 7 Col: 0".

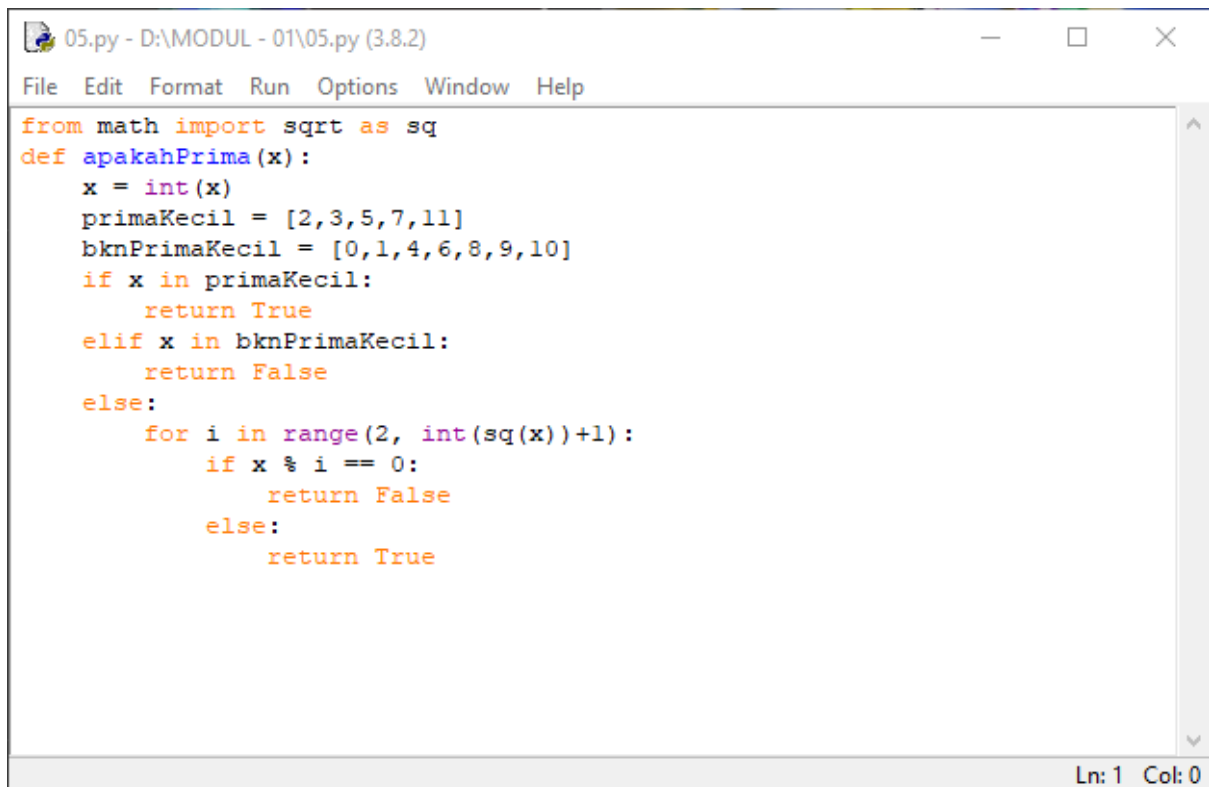


The screenshot shows a Python 3.8.2 Shell window titled "Python 3.8.2 Shell". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell displays the following output:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit  
(Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\04.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  
>>>
```

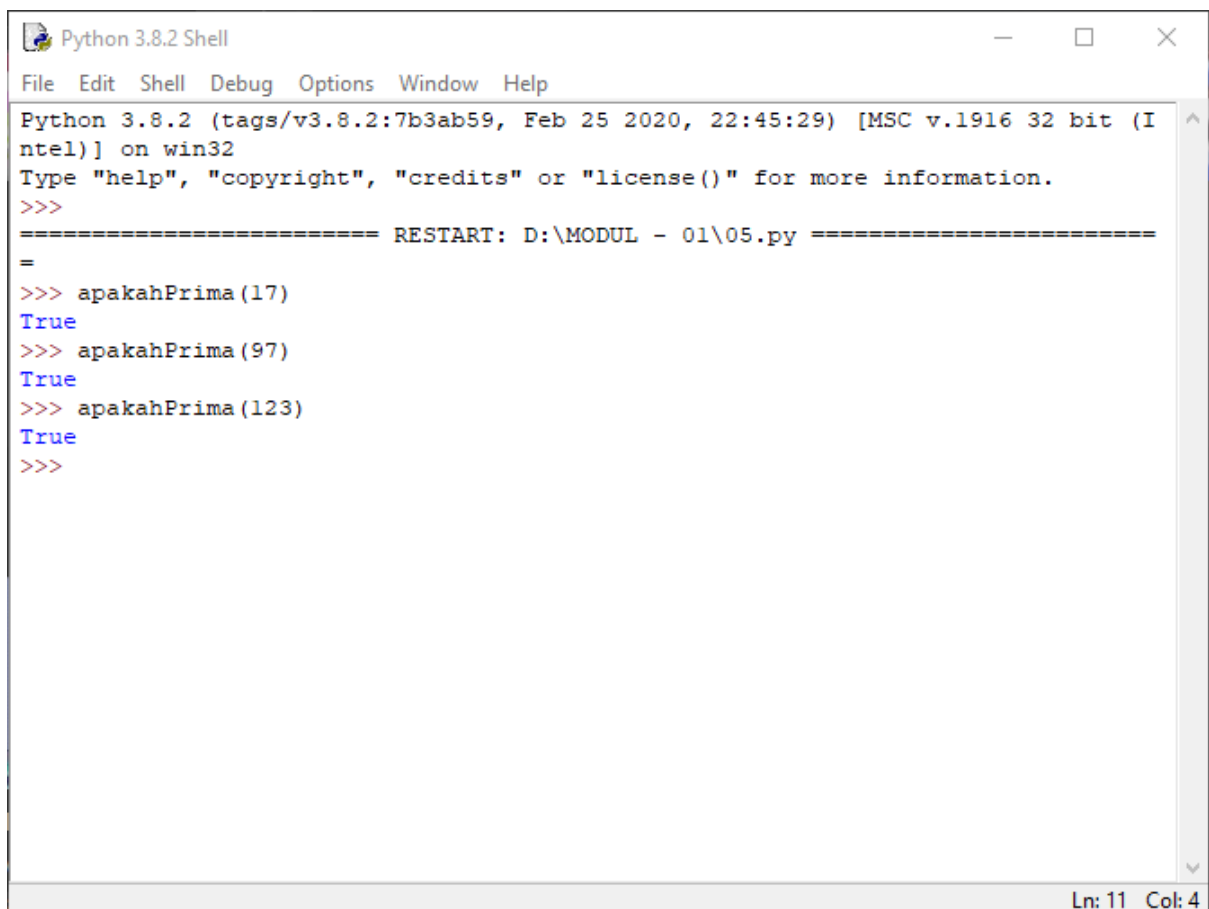
The status bar at the bottom right indicates "Ln: 10 Col: 4".

## 5. Fungsi bilangan prima



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

Ln: 1 Col: 0



```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\05.py =====
=
>>> apakahPrima(17)
True
>>> apakahPrima(97)
True
>>> apakahPrima(123)
True
>>>
```

Ln: 11 Col: 4

## 6. Program bilangan prima 2 sampai 1000



```
06.py - D:\MODUL - 01\06.py (3.8.2)
File Edit Format Run Options Window Help

def apaPrima():
    lower = 2
    upper = 1000
    print("Bilangan prima antara", lower, "and", upper, ":")
    for num in range(lower, upper + 1):
        if num > 1:
            for i in range(2, num):
                if (num % i) == 0:
                    break
            else:
                print(num)
```

Ln: 1 Col: 0

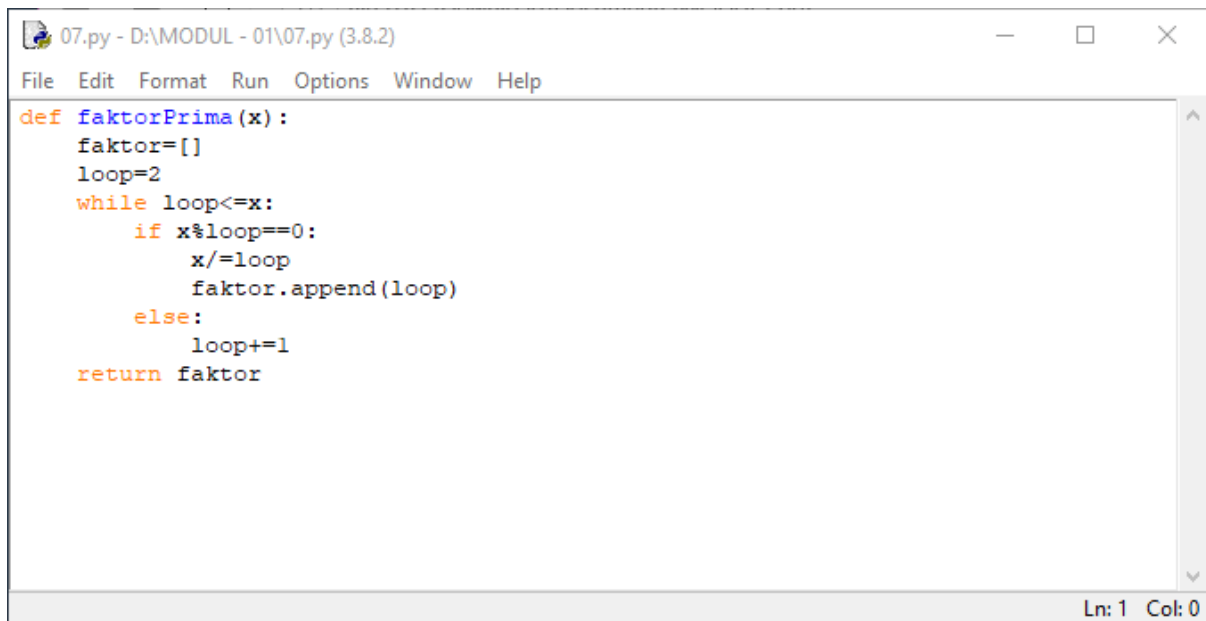


```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\06.py =====
>>> apaPrima()
Bilangan prima antara 2 and 1000 :
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
```

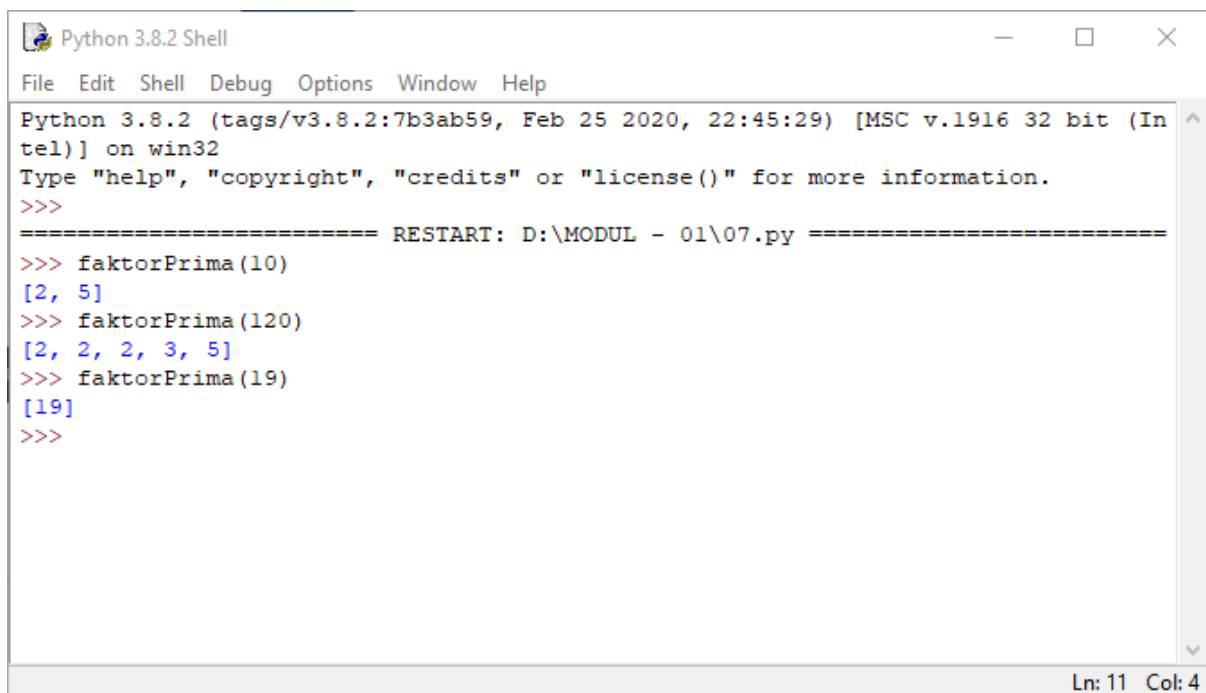
Ln: 175 Col: 4

## 7. Faktorisasi Prima



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

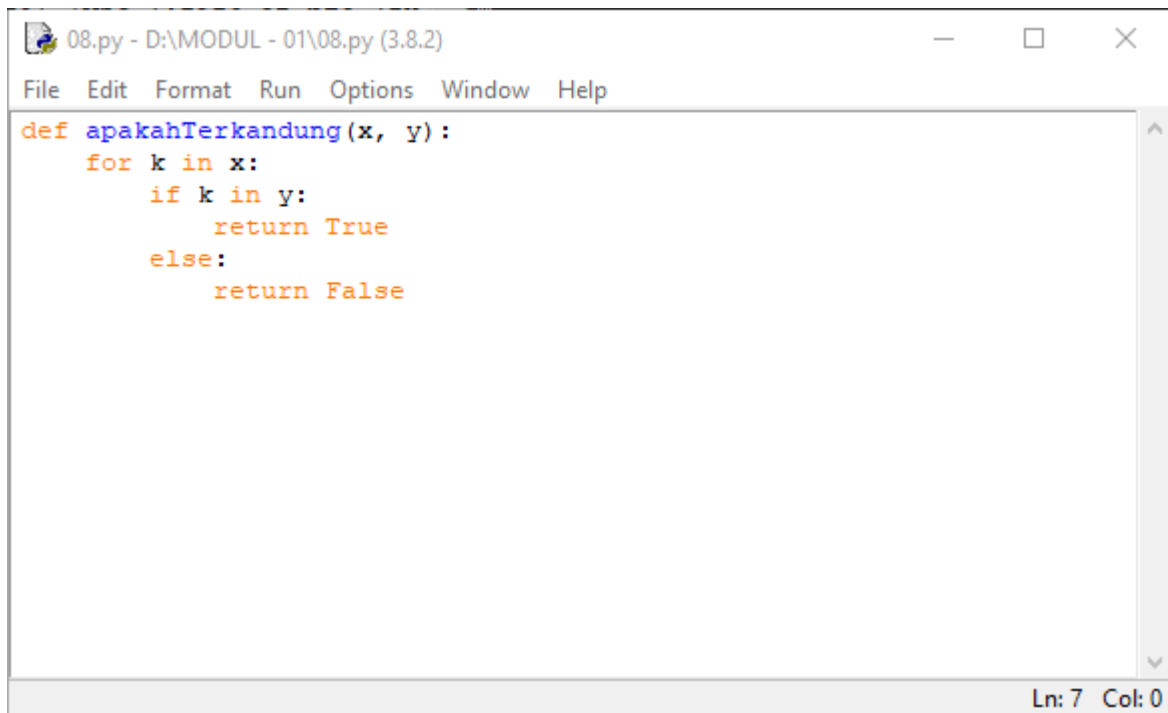
Ln: 1 Col: 0



```
Python 3.8.2 Shell  
File Edit Shell Debug Options Window Help  
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\07.py =====  
>>> faktorPrima(10)  
[2, 5]  
>>> faktorPrima(120)  
[2, 2, 2, 3, 5]  
>>> faktorPrima(19)  
[19]  
>>>
```

Ln: 11 Col: 4

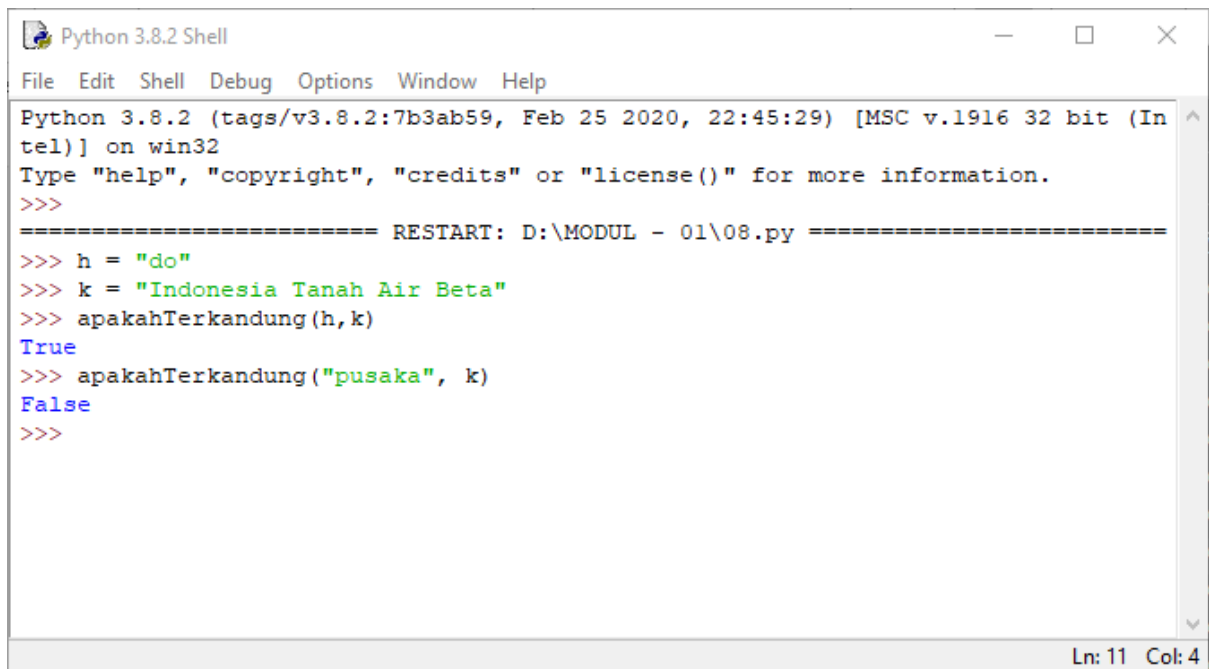
## 8. Fungsi



A screenshot of a Python IDE window titled "08.py - D:\MODUL - 01\08.py (3.8.2)". The window has a menu bar with "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The main text area contains the following Python code:

```
def apakahTerkandung(x, y):  
    for k in x:  
        if k in y:  
            return True  
        else:  
            return False
```

The status bar at the bottom right indicates "Ln: 7 Col: 0".



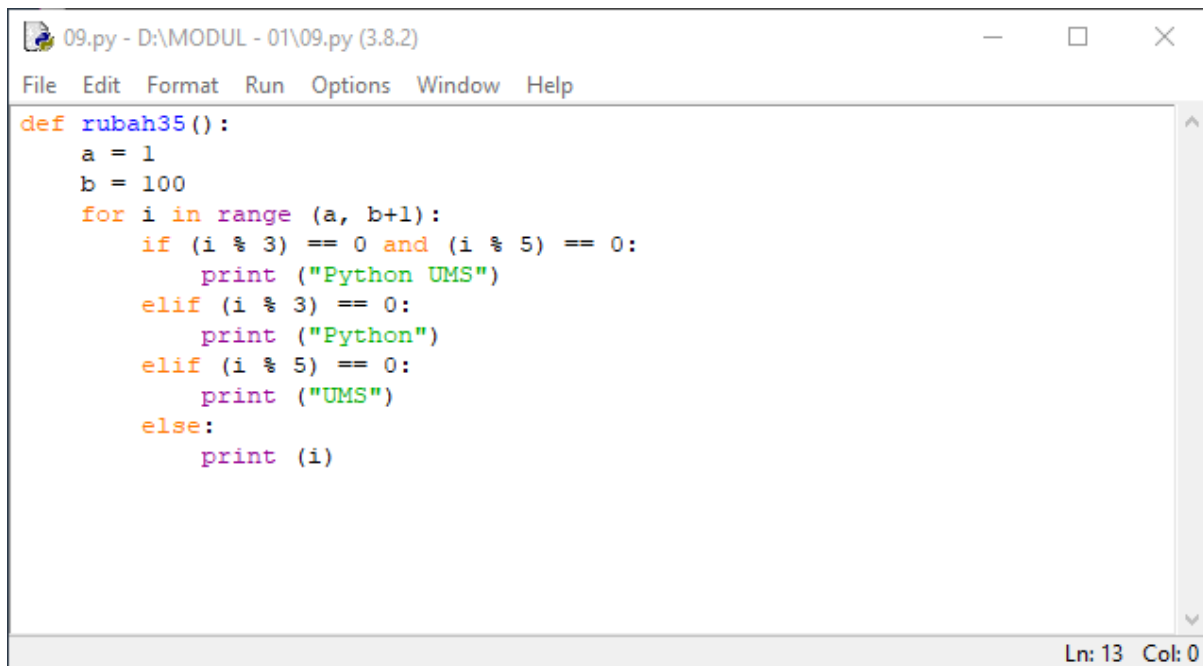
A screenshot of a "Python 3.8.2 Shell" window. The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The main text area shows the following output:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\08.py =====  
>>> h = "do"  
>>> k = "Indonesia Tanah Air Beta"  
>>> apakahTerkandung(h, k)  
True  
>>> apakahTerkandung("pusaka", k)  
False  
>>>
```

The status bar at the bottom right indicates "Ln: 11 Col: 4".

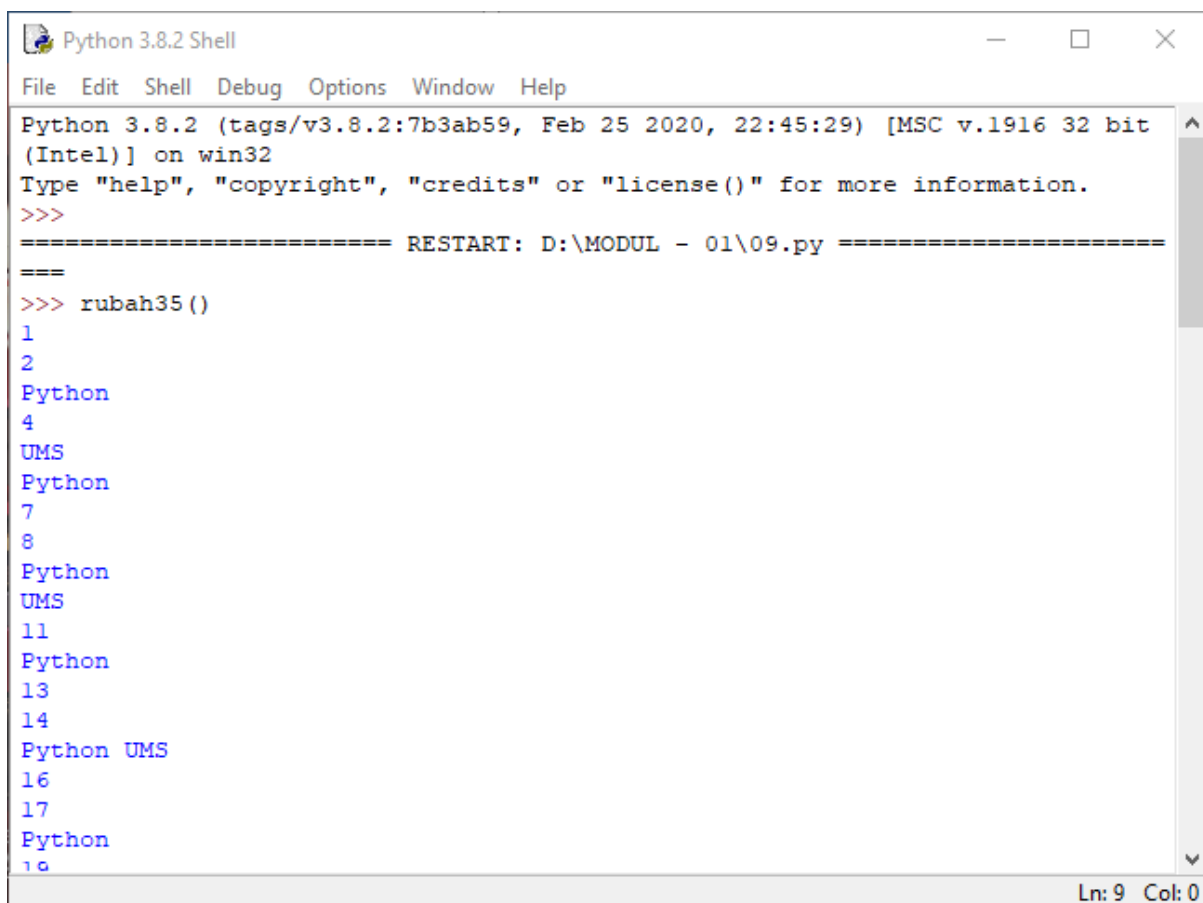


## 9. Program mencetak angka 1 sampai 100



```
def rubah35():
    a = 1
    b = 100
    for i in range (a, b+1):
        if (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)
```

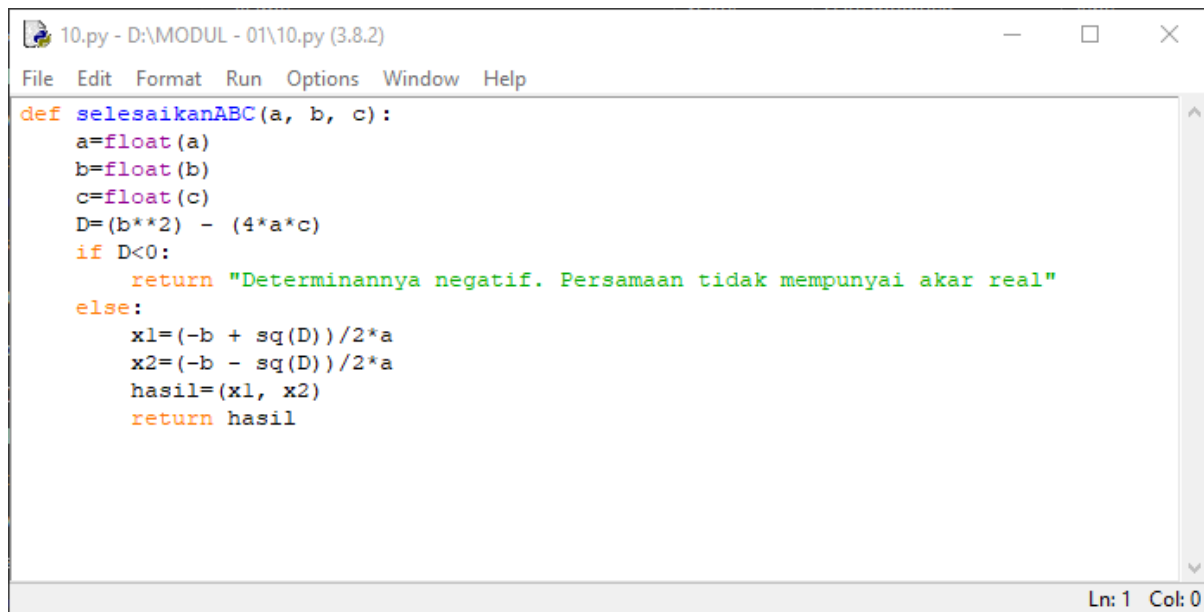
Ln: 13 Col: 0



```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit
(Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\09.py =====
>>> rubah35()
1
2
Python
4
UMS
Python
7
8
Python
UMS
11
Python
13
14
Python UMS
16
17
Python
19
```

Ln: 9 Col: 0

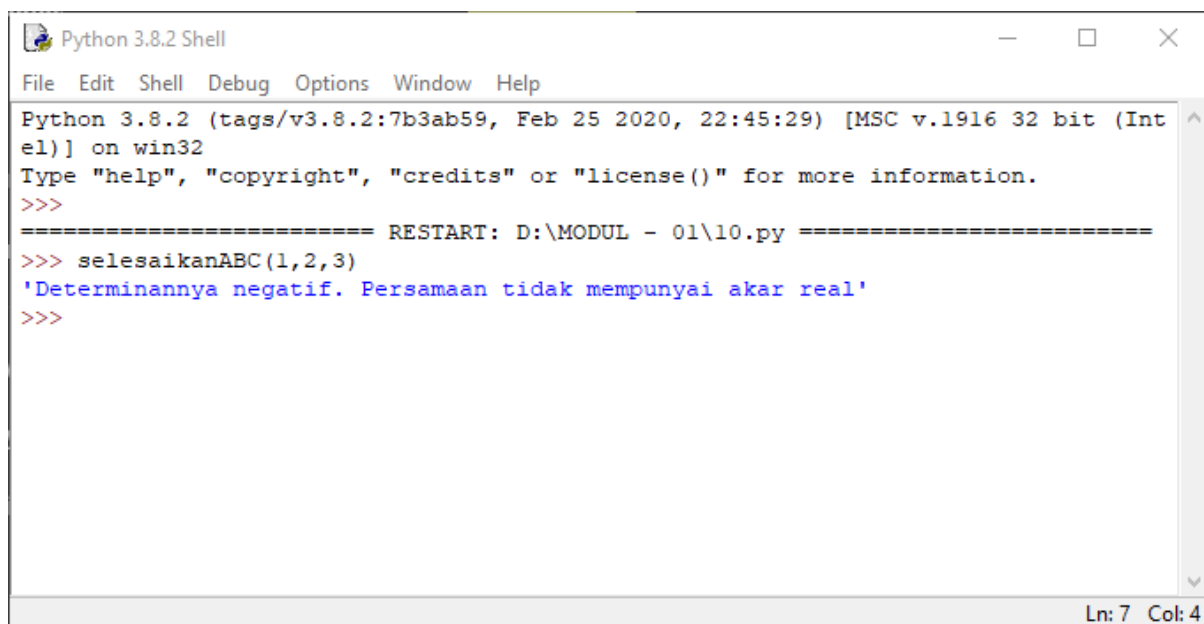
## 10. Modifikasi



The screenshot shows a Python IDE window titled "10.py - D:\MODUL - 01\10.py (3.8.2)". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code defines a function `selesaikanABC(a, b, c)` that calculates the discriminant  $D = b^2 - 4ac$ . If  $D < 0$ , it returns a string indicating no real roots. Otherwise, it calculates the two roots  $x_1$  and  $x_2$  using the quadratic formula and returns them as a list.

```
def selesaikanABC(a, b, c):  
    a=float(a)  
    b=float(b)  
    c=float(c)  
    D=(b**2) - (4*a*c)  
    if D<0:  
        return "Determinannya negatif. Persamaan tidak mempunyai akar real"  
    else:  
        x1=(-b + sq(D))/2*a  
        x2=(-b - sq(D))/2*a  
        hasil=(x1, x2)  
        return hasil
```

Ln: 1 Col: 0

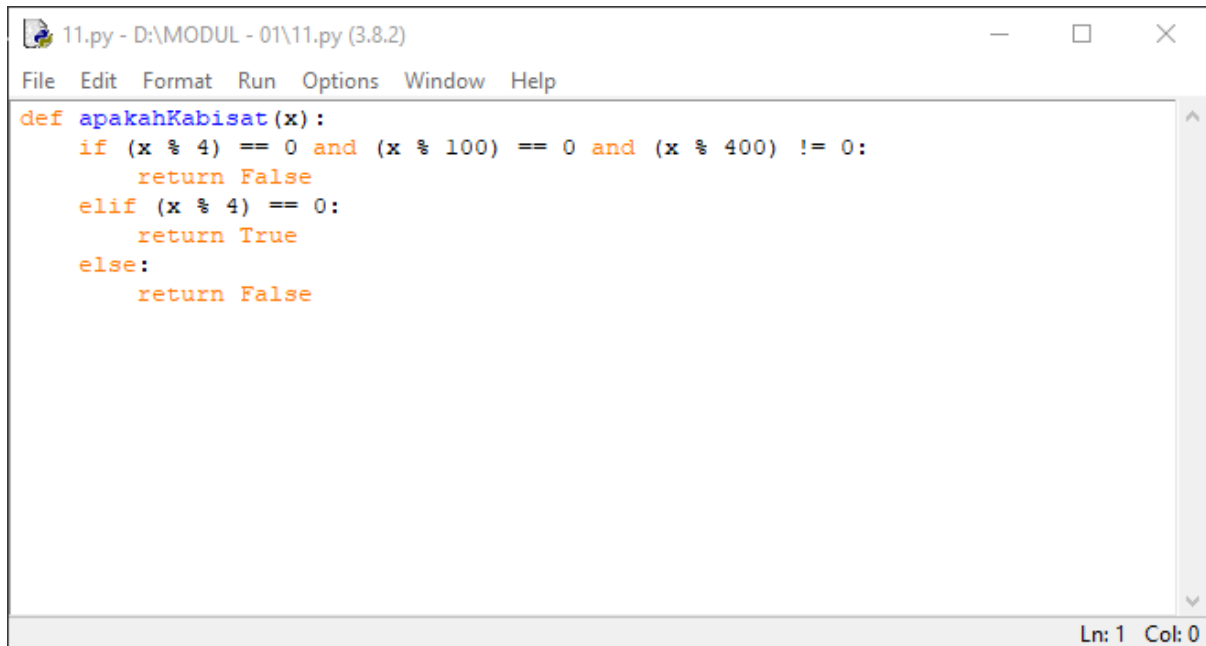


The screenshot shows a Python 3.8.2 Shell window. It displays the startup message and then the execution of the `selesaikanABC(1,2,3)` function. The output is the string `'Determinannya negatif. Persamaan tidak mempunyai akar real'`.

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\10.py =====  
>>> selesaikanABC(1,2,3)  
'Determinannya negatif. Persamaan tidak mempunyai akar real'  
>>>
```

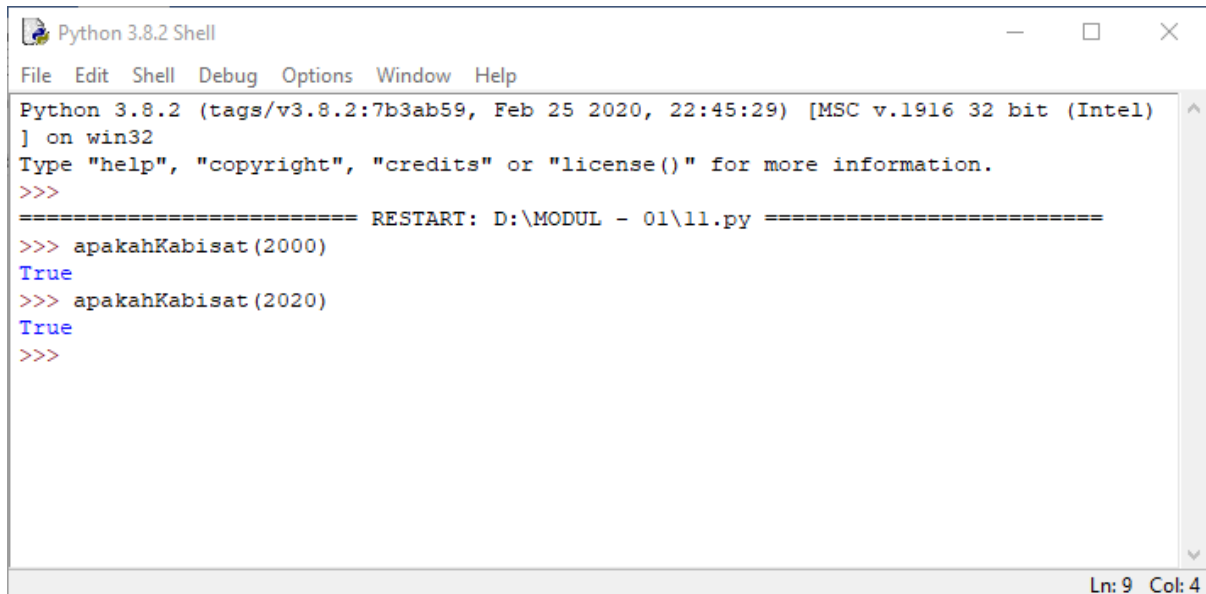
Ln: 7 Col: 4

## 11. Fungsi tahun kabisat



The screenshot shows a Python IDE window titled "11.py - D:\MODUL - 01\11.py (3.8.2)". The menu bar includes "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The code defines a function `apakahKabisat(x)` that checks if a year is a leap year. It returns `False` if the year is divisible by 400, `True` if it is divisible by 4 but not by 100, and `False` otherwise. The status bar at the bottom right indicates "Ln: 1 Col: 0".

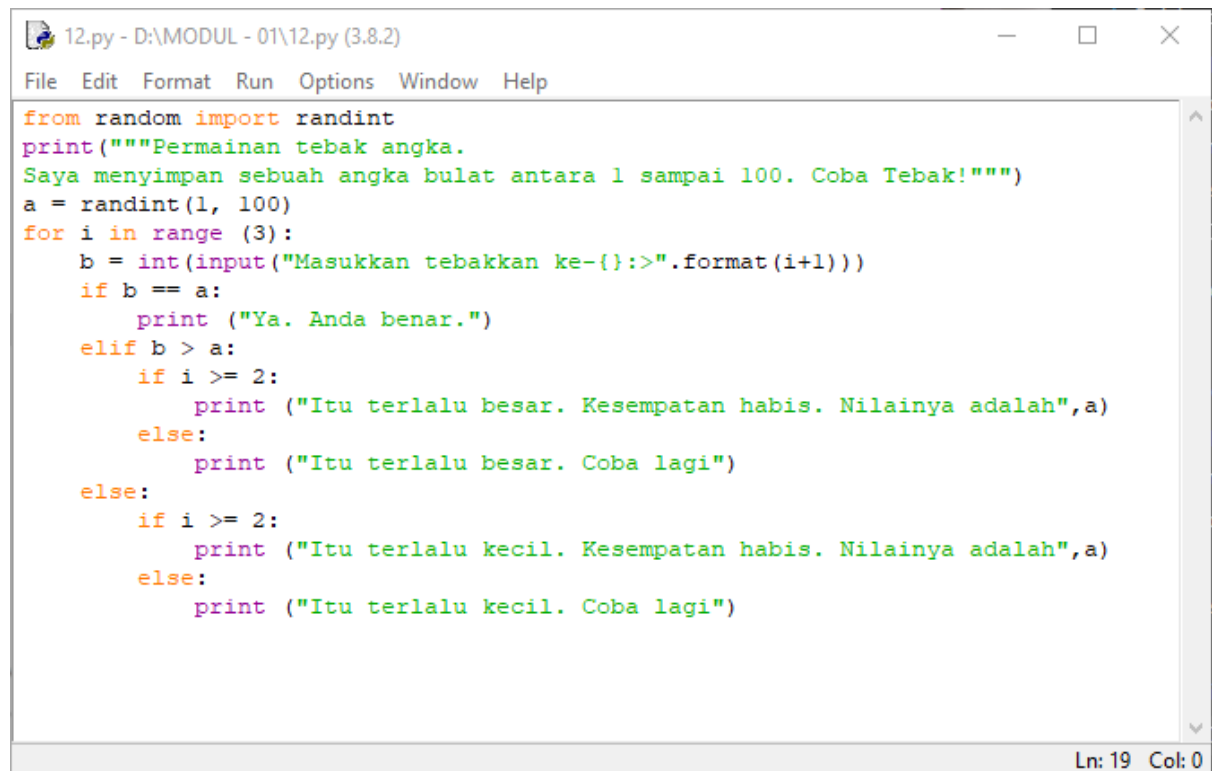
```
def apakahKabisat(x):  
    if (x % 4) == 0 and (x % 100) == 0 and (x % 400) != 0:  
        return False  
    elif (x % 4) == 0:  
        return True  
    else:  
        return False
```



The screenshot shows a Python 3.8.2 Shell window titled "Python 3.8.2 Shell". The menu bar includes "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The shell displays the Python version and architecture, followed by a restart command for the file "D:\MODUL - 01\11.py". The function `apakahKabisat` is called with arguments 2000 and 2020, both returning `True`. The status bar at the bottom right indicates "Ln: 9 Col: 4".

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\11.py =====  
>>> apakahKabisat(2000)  
True  
>>> apakahKabisat(2020)  
True  
>>>
```

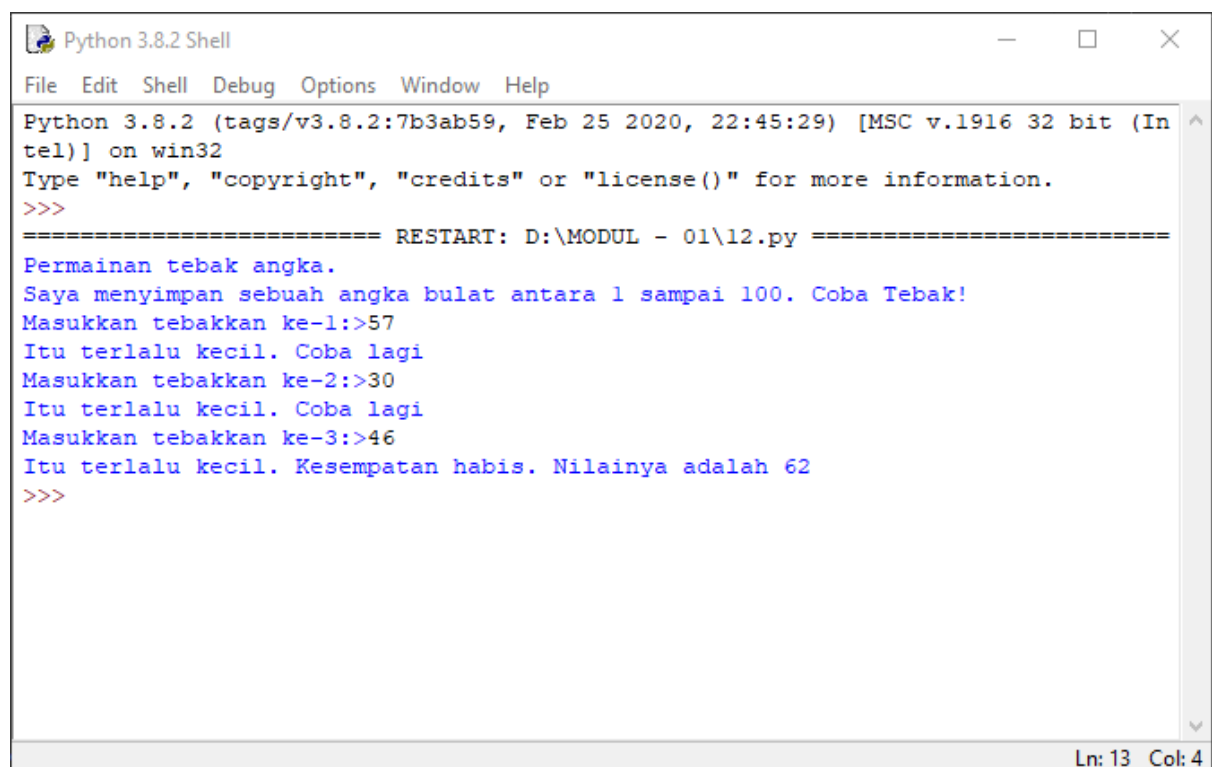
## 12. Program permainan tebak angka



```
12.py - D:\MODUL - 01\12.py (3.8.2)
File Edit Format Run Options Window Help

from random import randint
print("""Permainan tebak angka.
Saya menyimpan sebuah angka bulat antara 1 sampai 100. Coba Tebak!""")
a = randint(1, 100)
for i in range (3):
    b = int(input("Masukkan tebakkan ke-{:>}.format(i+1)))
    if b == a:
        print ("Ya. Anda benar.")
    elif b > a:
        if i >= 2:
            print ("Itu terlalu besar. Kesempatan habis. Nilainya adalah",a)
        else:
            print ("Itu terlalu besar. Coba lagi")
    else:
        if i >= 2:
            print ("Itu terlalu kecil. Kesempatan habis. Nilainya adalah",a)
        else:
            print ("Itu terlalu kecil. Coba lagi")
```

Ln: 19 Col: 0



```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\12.py =====
Permainan tebak angka.
Saya menyimpan sebuah angka bulat antara 1 sampai 100. Coba Tebak!
Masukkan tebakkan ke-1:>57
Itu terlalu kecil. Coba lagi
Masukkan tebakkan ke-2:>30
Itu terlalu kecil. Coba lagi
Masukkan tebakkan ke-3:>46
Itu terlalu kecil. Kesempatan habis. Nilainya adalah 62
>>>
```

Ln: 13 Col: 4

### 13. Fungsi

```
13.py - D:\MODUL - 01\13.py (3.8.2)
File Edit Format Run Options Window Help

def katakan(angka):
    satuan = ["satu", "dua", "tiga", "empat", "lima",
              "enam", "tujuh", "delapan", "sembilan", "sepuluh",
              "sebelas", "dua belas", "tiga belas", "empat belas", "lima belas",
              "enam belas", "tujuh belas", "delapan belas", "sembilan belas"]
    angka = '{:0,.0f}'.format(int(angka))
    angka = angka.split(",")
    katakan = []
    idx = 1
    for x in angka[::-1]:
        seribu = False
        if idx == 2 and x[-1]!="0":
            if int(x)< 2 :
                katakan.append("seribu")
                seribu = True
            else:
                katakan.append("ribu")
        if idx == 3 and x[-1]!="0":
            katakan.append("juta")
        if seribu == False:
            if int(x[-2:])<20 and int(x[-2:])>0:
                katakan.append(satuan[int(x[-2:])-1])
            elif int(x[-2:])>0:
                if int(x[-1])!=0:
                    katakan.append(satuan[int(x[-1])-1])
                if int(x[-2]) != 0:
                    katakan.append(satuan[int(x[-2])-1]+" puluh")
        if int(x[0]) > 2 and len(x)==3 :
            katakan.append(satuan[int(x[0])-1]+" ratus")
        elif len(x)==3 and int(x[0])!=0 :
            katakan.append("seratus")
        idx+=1
    return " ".join(katakan[::-1])

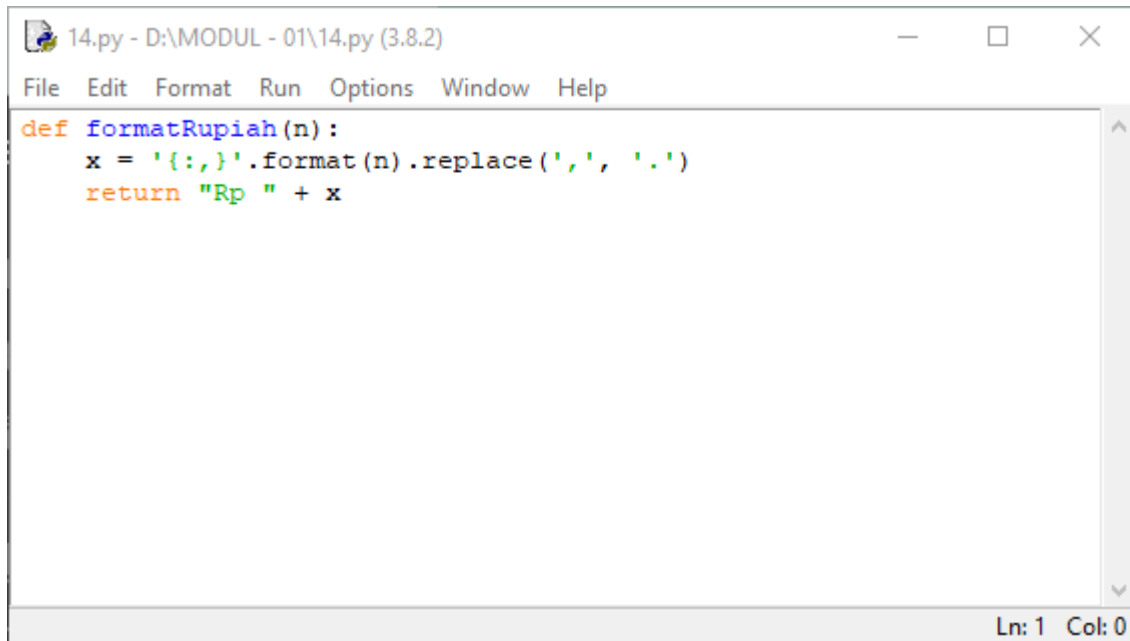
Ln: 1 Col: 0
```

```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32
bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: D:\MODUL - 01\13.py =====
>>> katakan(99987654)
'sembilan puluh sembilan juta sembilan ratus delapan puluh tujuh ribu ena
m ratus lima puluh empat'
>>>

Ln: 7 Col: 4
```

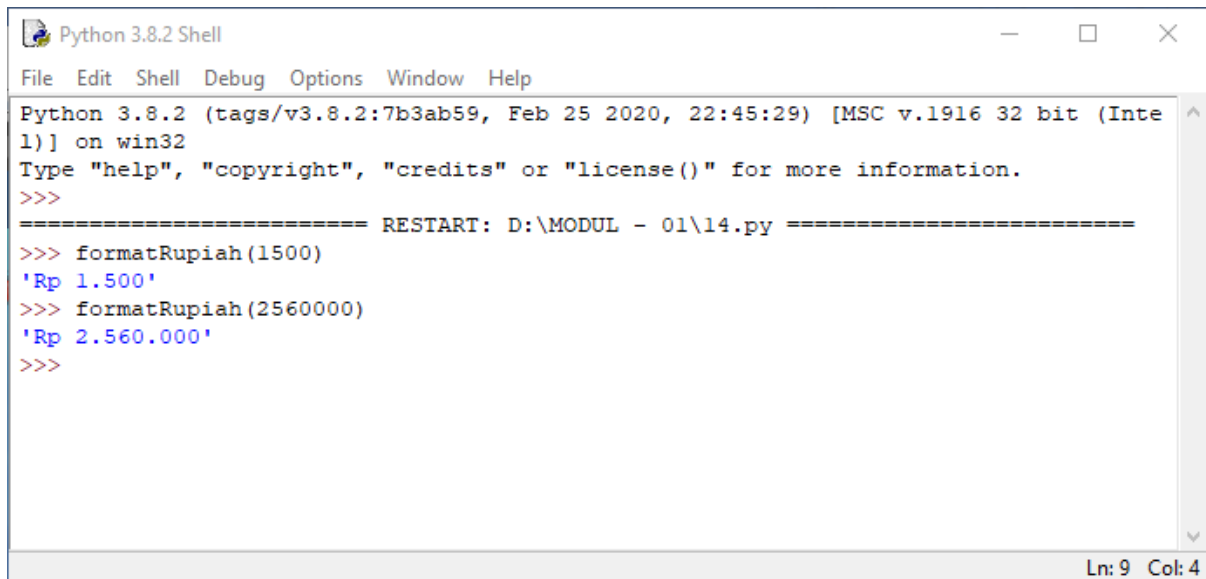
## 14. Fungsi



A screenshot of a Python IDE window titled "14.py - D:\MODUL - 01\14.py (3.8.2)". The window has a menu bar with "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The main text area contains the following Python code:

```
def formatRupiah(n):  
    x = '{:,}'.format(n).replace(',', '.')  
    return "Rp " + x
```

The status bar at the bottom right indicates "Ln: 1 Col: 0".



A screenshot of a Python 3.8.2 Shell window titled "Python 3.8.2 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The main text area shows the following output:

```
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: D:\MODUL - 01\14.py =====  
>>> formatRupiah(1500)  
'Rp 1.500'  
>>> formatRupiah(2560000)  
'Rp 2.560.000'  
>>>
```

The status bar at the bottom right indicates "Ln: 9 Col: 4".