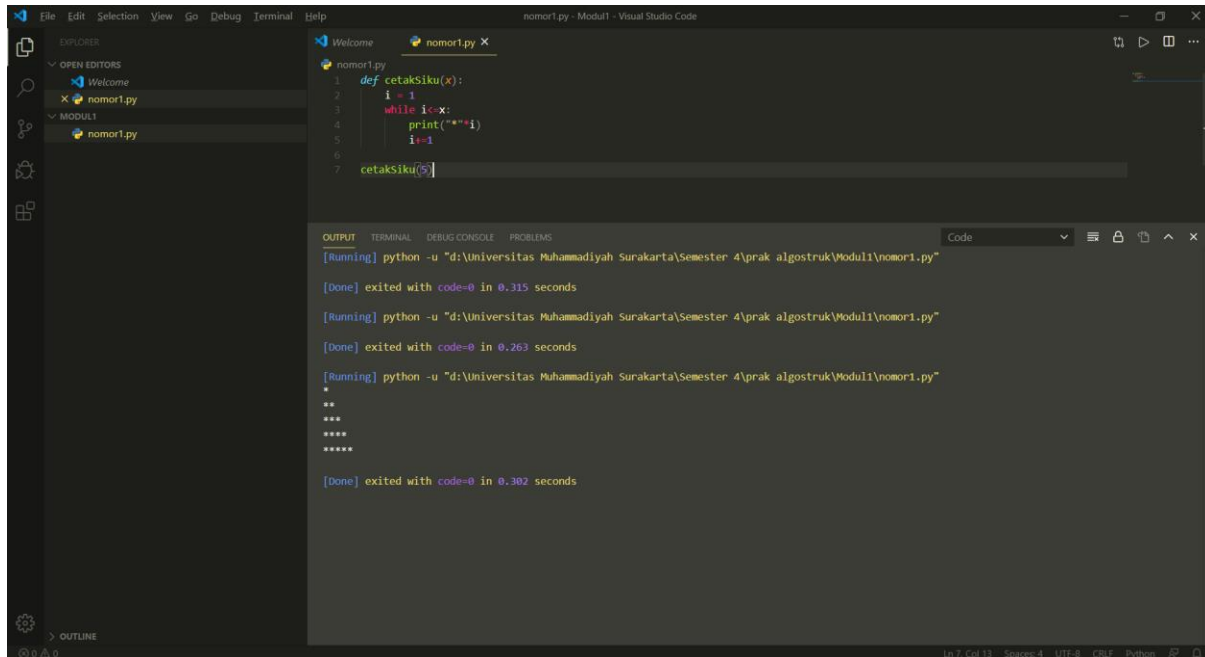


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Laporan Praktikum Algoritma Struktur Data

1. Output file nomor1.py



```
def cetakSiku(x):
    i = 1
    while i <= x:
        print("*"*i)
        i+=1
    cetakSiku(x)
```

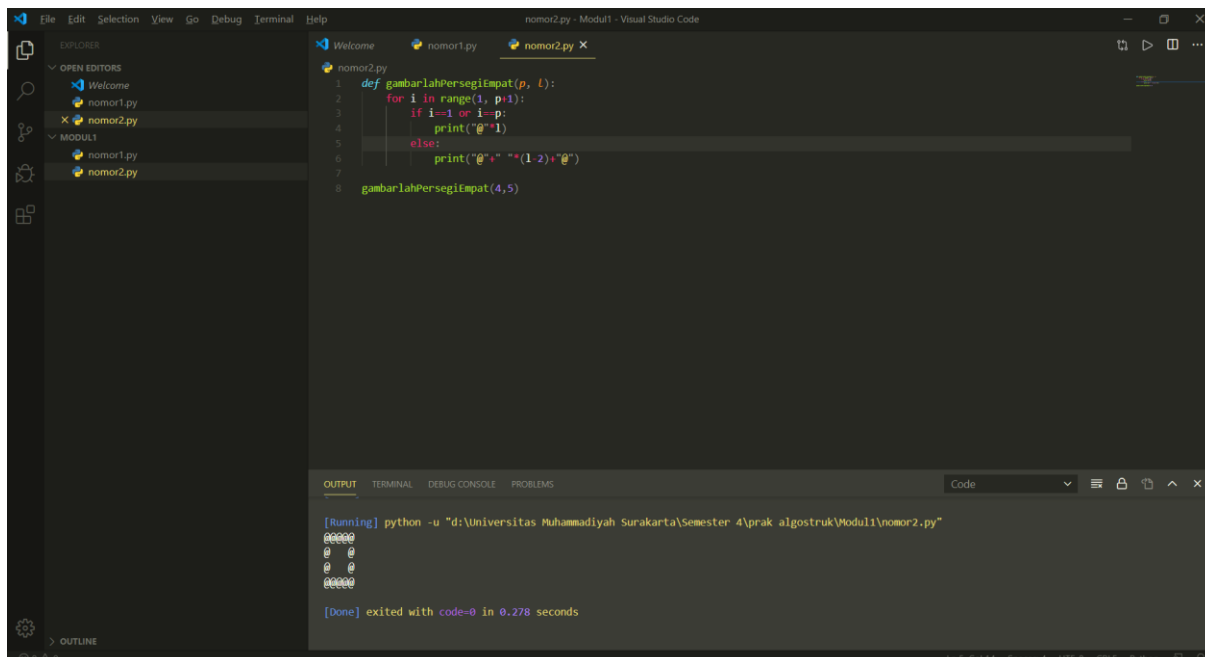
OUTPUT

```
[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor1.py"
[Done] exited with code=0 in 0.315 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor1.py"
[Done] exited with code=0 in 0.263 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor1.py"
*
**
***
****
*****
[Done] exited with code=0 in 0.302 seconds
```

2. Output file nomor2.py

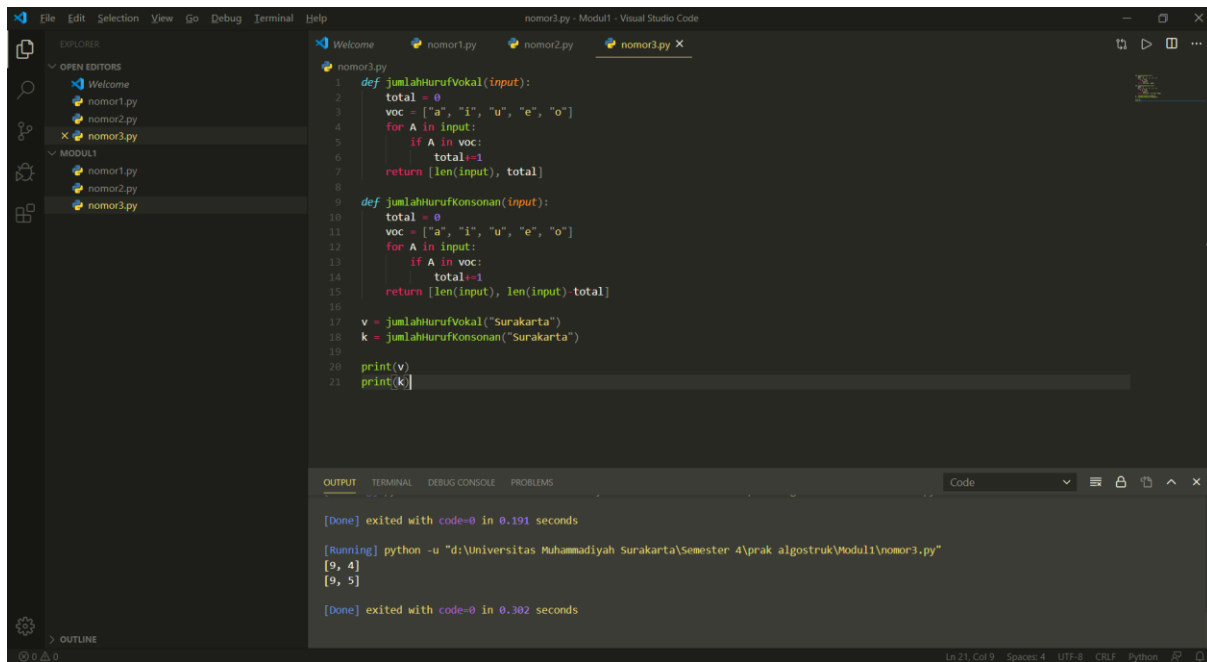


```
def gambarlahPersegiEmpat(p, l):
    for i in range(1, p+1):
        if i==1 or i==p:
            print("@"*l)
        else:
            print("@*"* (l-2)+"@")
    gambarlahPersegiEmpat(4,5)
```

OUTPUT

```
[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor2.py"
@@@@@
@    @
@    @
@    @
@@@@@
[Done] exited with code=0 in 0.278 seconds
```

3. Output file nomor3.py



```
1 def jumlahHurufVokal(input):
2     total = 0
3     voc = ["a", "i", "u", "e", "o"]
4     for A in input:
5         if A in voc:
6             total+=1
7     return [len(input), total]
8
9 def jumlahHurufKonsonan(input):
10    total = 0
11    voc = ["a", "i", "u", "e", "o"]
12    for A in input:
13        if A in voc:
14            total+=1
15    return [len(input), len(input)-total]
16
17 v = jumlahHurufVokal("Surakarta")
18 k = jumlahHurufKonsonan("Surakarta")
19
20 print(v)
21 print(k)
```

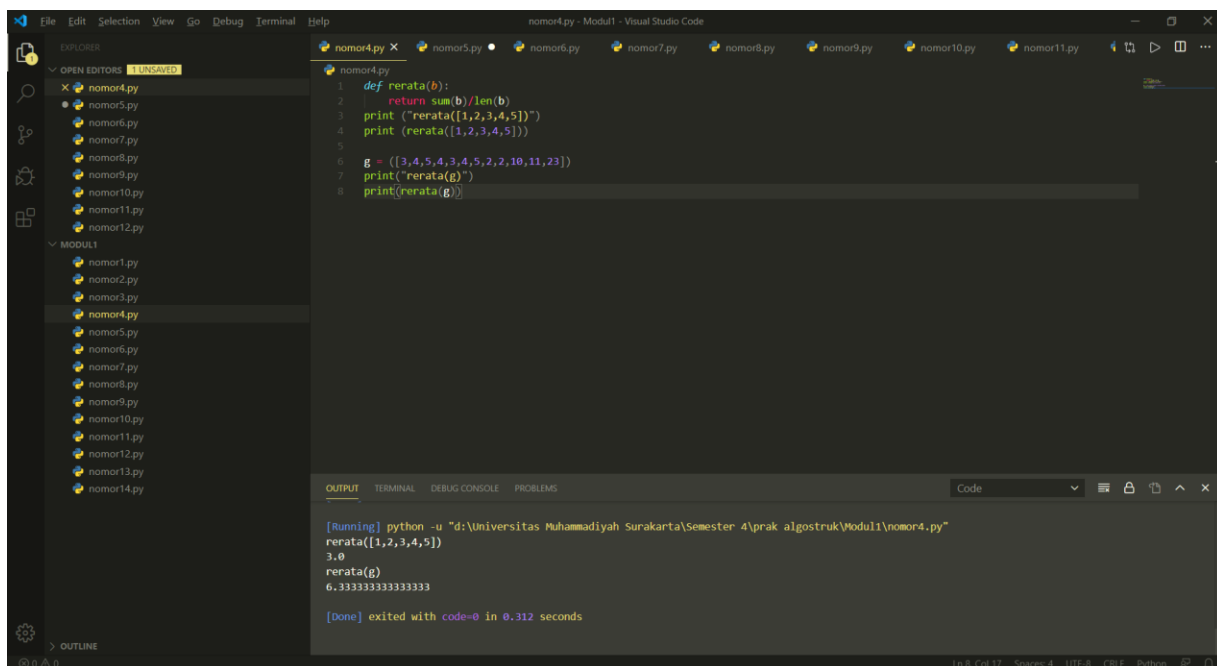
OUTPUT

```
[Done] exited with code=0 in 0.191 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor3.py"
[9, 4]
[9, 5]

[Done] exited with code=0 in 0.302 seconds
```

4. Output file nomor4.py



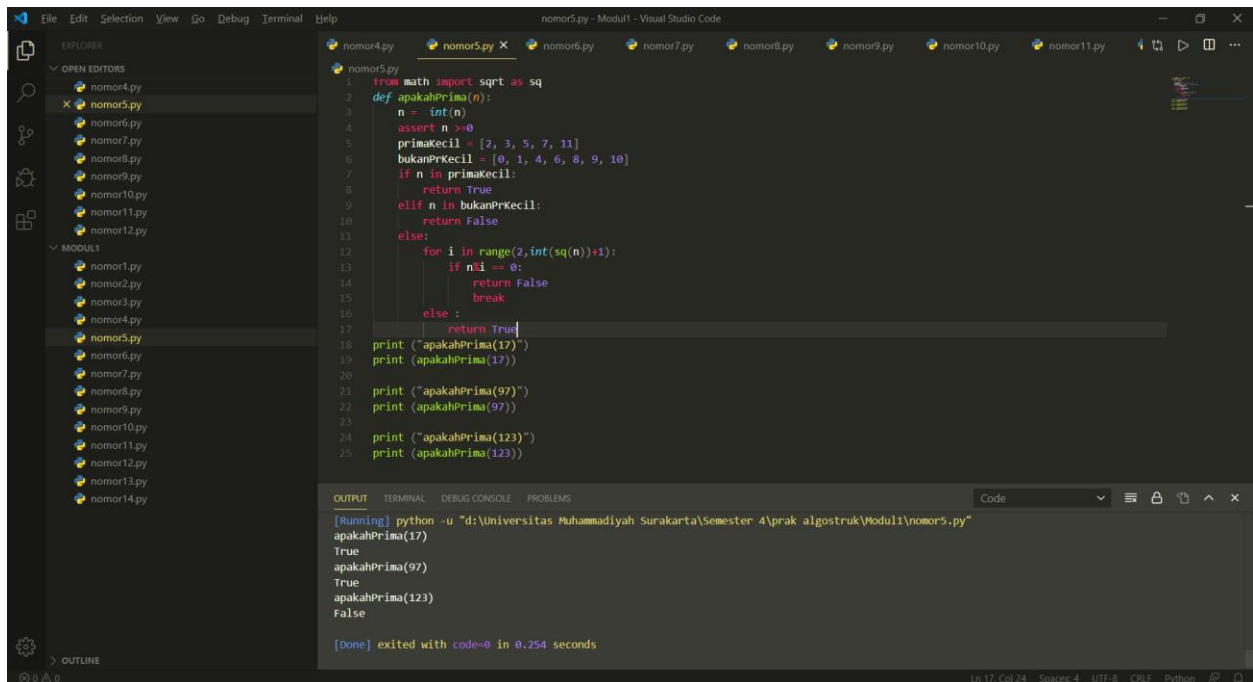
```
1 def rerata(b):
2     return sum(b)/len(b)
3
4 print ("rerata([1,2,3,4,5])")
5 print (rerata([1,2,3,4,5]))
6
7 g = ([3,4,5,4,3,4,5,2,2,10,11,23])
8 print("rerata(g)")
9 print(rerata(g))
```

OUTPUT

```
[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor4.py"
rerata([1,2,3,4,5])
3.0
rerata(g)
6.333333333333333

[Done] exited with code=0 in 0.312 seconds
```

5. Output file nomor5.py

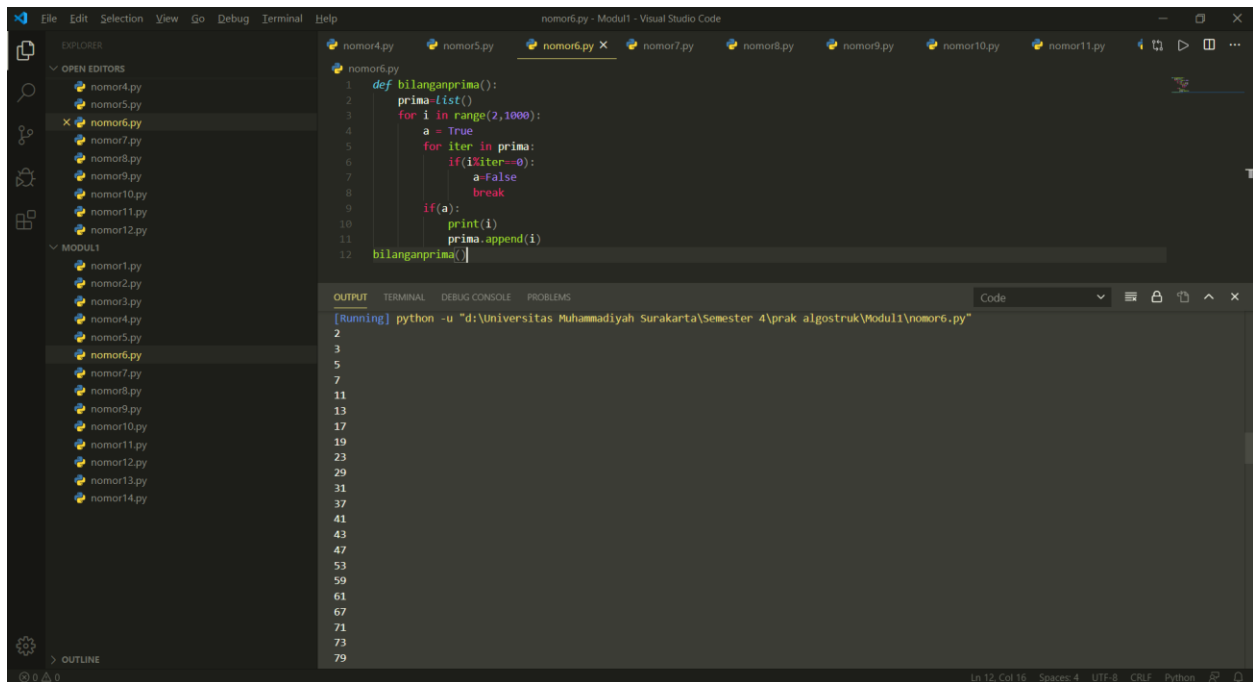


```
1 from math import sqrt as sq
2 def apakahPrima(n):
3     n = int(n)
4     assert n >= 0
5     primaKecil = [2, 3, 5, 7, 11]
6     bukanPrKecil = [0, 1, 4, 6, 8, 9, 10]
7     if n in primaKecil:
8         return True
9     elif n in bukanPrKecil:
10        return False
11    else:
12        for i in range(2, int(sq(n))+1):
13            if n%i == 0:
14                return False
15            break
16    else:
17        return True
18 print ("apakahPrima(17)")
19 print (apakahPrima(17))
20
21 print ("apakahPrima(97)")
22 print (apakahPrima(97))
23
24 print ("apakahPrima(123)")
25 print (apakahPrima(123))
```

OUTPUT

```
[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor5.py"
apakahPrima(17)
True
apakahPrima(97)
True
apakahPrima(123)
False
[Done] exited with code=0 in 0.254 seconds
```

6. Output file nomor6.py

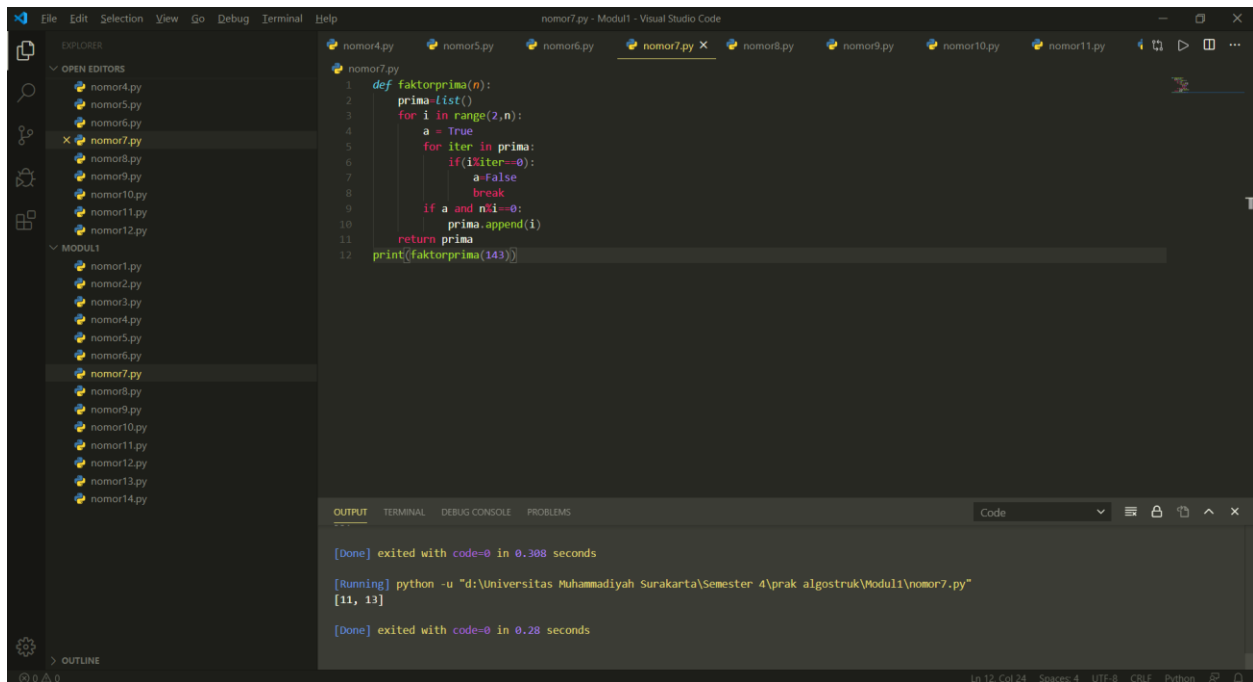


```
1 def bilanganPrima():
2     prima = list()
3     for i in range(2, 1000):
4         a = True
5         for iter in prima:
6             if(i%iter==0):
7                 a=False
8                 break
9         if(a):
10            print(i)
11            prima.append(i)
12    return prima
```

OUTPUT

```
[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor6.py"
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
```

7. Output file nomor7.py



```
File Edit Selection View Go Debug Terminal Help
nomor7.py - Modul1 - Visual Studio Code

EXPLORER
  OPEN EDITORS
    nomor4.py
    nomor5.py
    nomor6.py
    X nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
  MODUL1
    nomor1.py
    nomor2.py
    nomor3.py
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
    nomor13.py
    nomor14.py

OUTLINE

1 def faktorprima(n):
2     prima=list()
3     for i in range(2,n):
4         a = True
5         for iter in prima:
6             if(i%iter==0):
7                 a=False
8                 break
9         if a and n%i==0:
10             prima.append(i)
11     return prima
12 print(faktorprima(143))

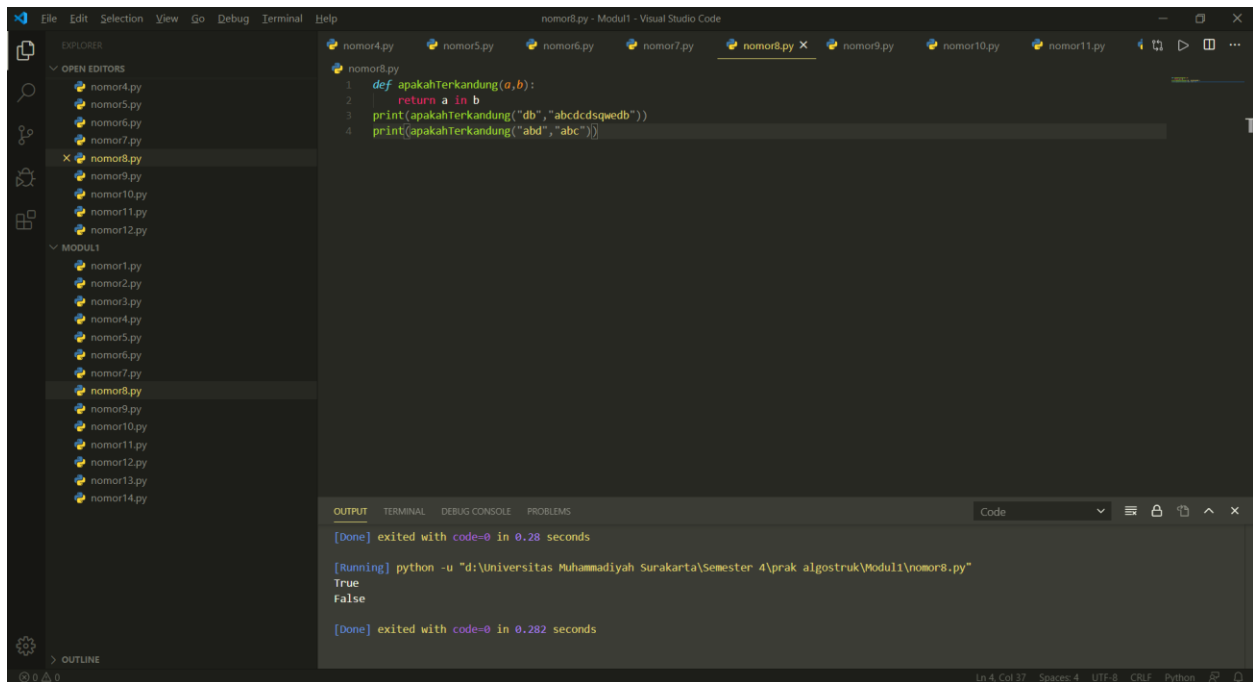
OUTPUT
[Done] exited with code=0 in 0.308 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor7.py"
[11, 13]

[Done] exited with code=0 in 0.28 seconds

Ln 12, Col 24 Spaces: 4 UTF-8 CRLF Python
```

8. Output file nomor8.py



```
File Edit Selection View Go Debug Terminal Help
nomor8.py - Modul1 - Visual Studio Code

EXPLORER
  OPEN EDITORS
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    X nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
  MODUL1
    nomor1.py
    nomor2.py
    nomor3.py
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
    nomor13.py
    nomor14.py

OUTLINE

1 def apakahTerkandung(a,b):
2     return a in b
3     print(apakahTerkandung("db","abcdcdsqwedb"))
4     print(apakahTerkandung("abd","abc"))

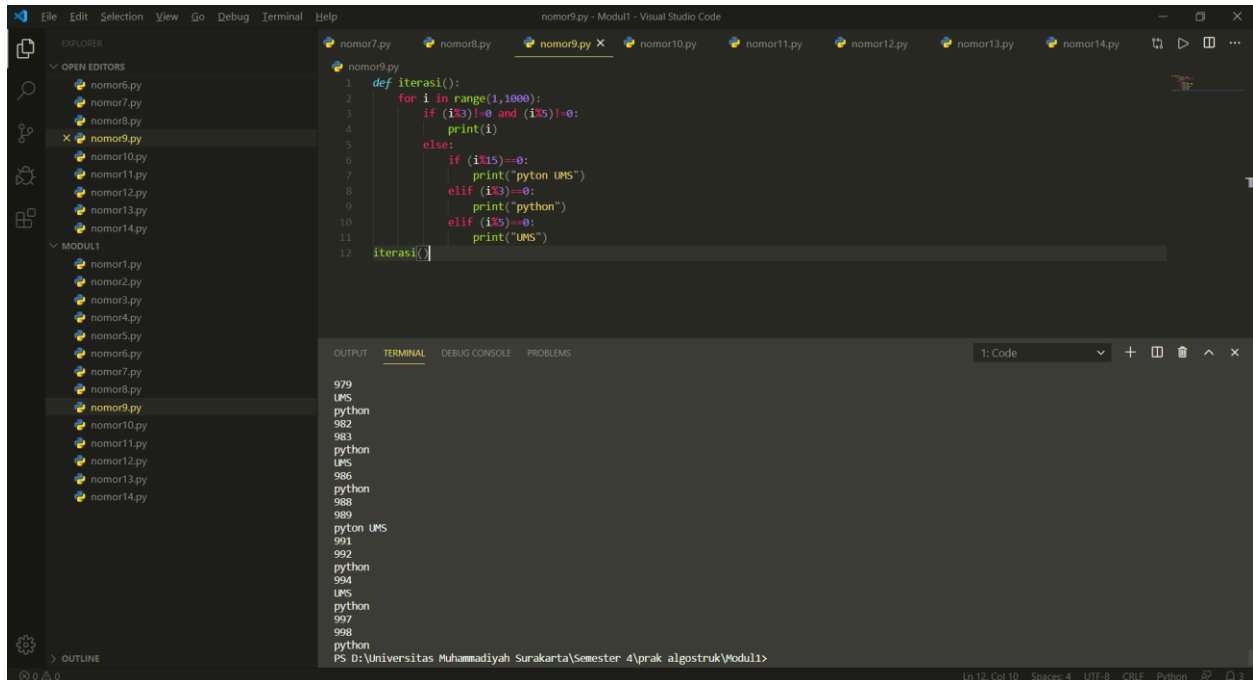
OUTPUT
[Done] exited with code=0 in 0.28 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor8.py"
True
False

[Done] exited with code=0 in 0.282 seconds

Ln 4, Col 37 Spaces: 4 UTF-8 CRLF Python
```

9. Output file nomor9.py



The screenshot shows the Visual Studio Code interface with the file explorer on the left displaying a list of files from nomor1.py to nomor14.py. The main editor window shows the code for nomor9.py, which defines a function `iterasi()` that iterates from 1 to 1000, checking for divisibility by 3 and 5, and printing "python UMS" or "python". The terminal at the bottom shows the output of running the code, displaying the sequence of printed values.

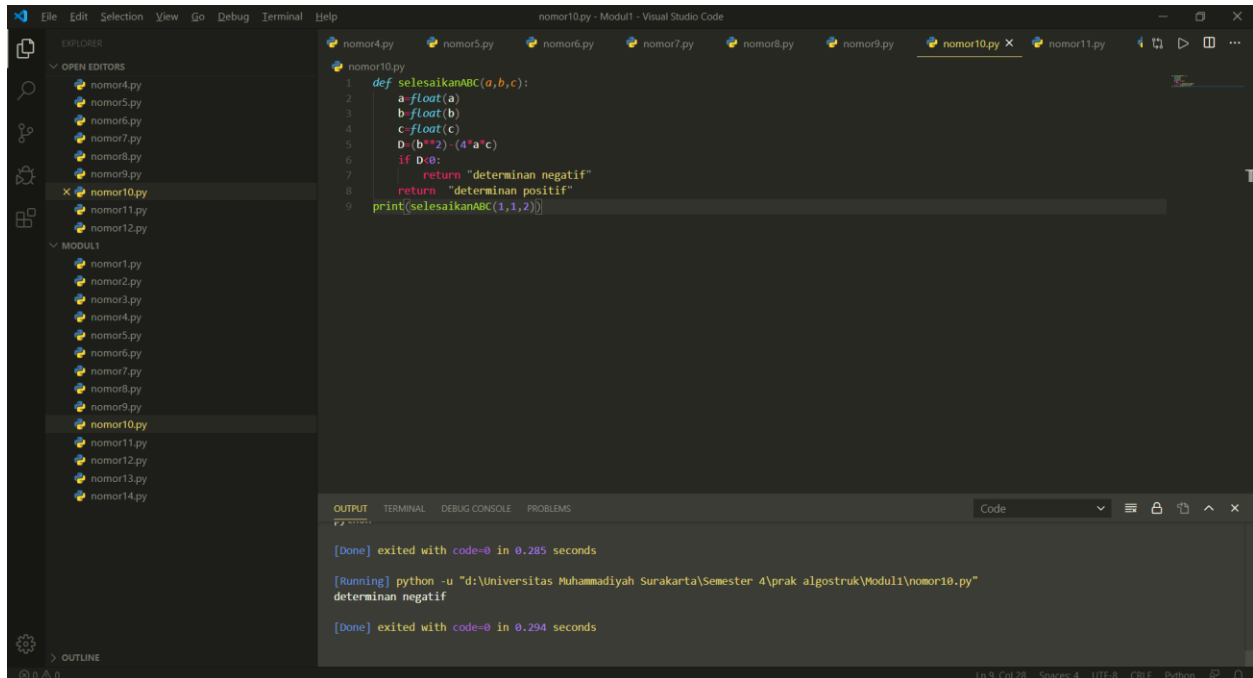
```
1 def iterasi():
2     for i in range(1,1000):
3         if (i%3)!=0 and (i%5)!=0:
4             print(i)
5         else:
6             if (i%5)==0:
7                 print("python UMS")
8             elif (i%3)==0:
9                 print("python")
10            elif (i%5)==0:
11                print("UMS")
12 iterasi()
```

OUTPUT

```
979
UMS
python
982
983
python
python
UMS
986
python
988
989
python UMS
991
992
python
994
UMS
python
997
998
python
```

PS D:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1>

10. Output file nomor10.py



The screenshot shows the Visual Studio Code interface with the file explorer on the left displaying a list of files from nomor4.py to nomor14.py. The main editor window shows the code for nomor10.py, which defines a function `selesaikanABC(a,b,c)` that calculates the discriminant $D = (b^2) - (4*a*c)$ and returns "determinan negatif" or "determinan positif". The terminal at the bottom shows the output of running the code, displaying the sequence of printed values.

```
1 def selesaikanABC(a,b,c):
2     a=float(a)
3     b=float(b)
4     c=float(c)
5     D=(b**2)-(4*a*c)
6     if D<0:
7         return "determinan negatif"
8     return "determinan positif"
9 print(selesaikanABC(1,1,2))
```

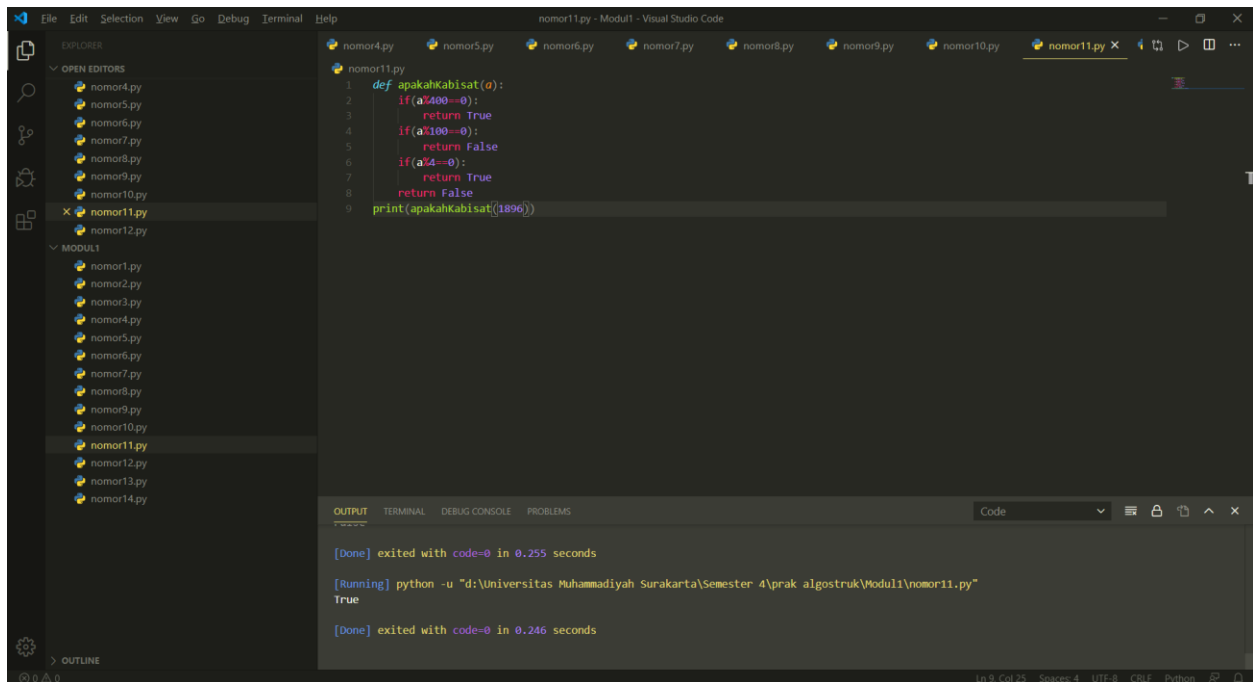
OUTPUT

```
[Done] exited with code=0 in 0.285 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor10.py"
determinan negatif

[Done] exited with code=0 in 0.294 seconds
```

11. Output file nomor11.py



```
File Edit Selection View Go Debug Terminal Help
nomor11.py - Modul1 - Visual Studio Code

EXPLORER
  OPEN EDITORS
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
  MODUL1
    nomor1.py
    nomor2.py
    nomor3.py
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
    nomor13.py
    nomor14.py

nomor11.py
1 def apakahkabisat(p):
2     if (a%400==0):
3         return True
4     if (a%100==0):
5         return False
6     if (a%4==0):
7         return True
8     return False
9 print(apakahkabisat(1896))

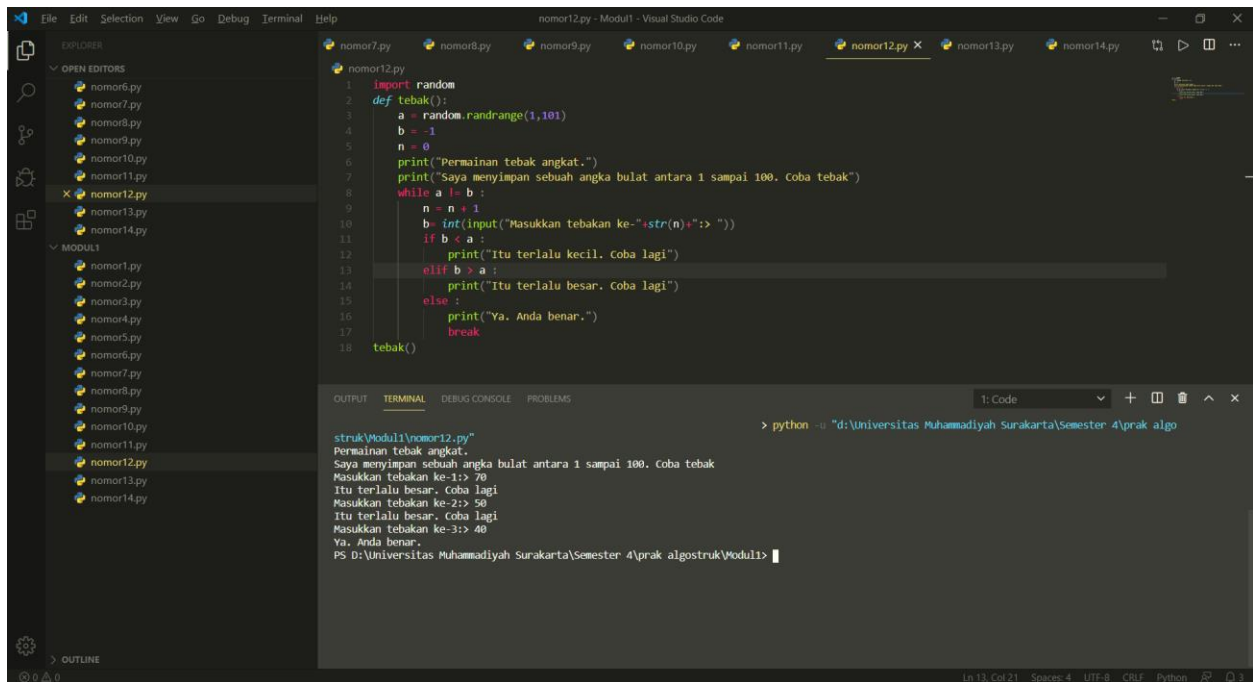
OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS
[Done] exited with code=0 in 0.255 seconds

[Running] python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor11.py"
True

[Done] exited with code=0 in 0.246 seconds

Ln 9, Col 25 Spaces: 4 UTF-8 CRLF Python
```

12. Output file nomor12.py



```
File Edit Selection View Go Debug Terminal Help
nomor12.py - Modul1 - Visual Studio Code

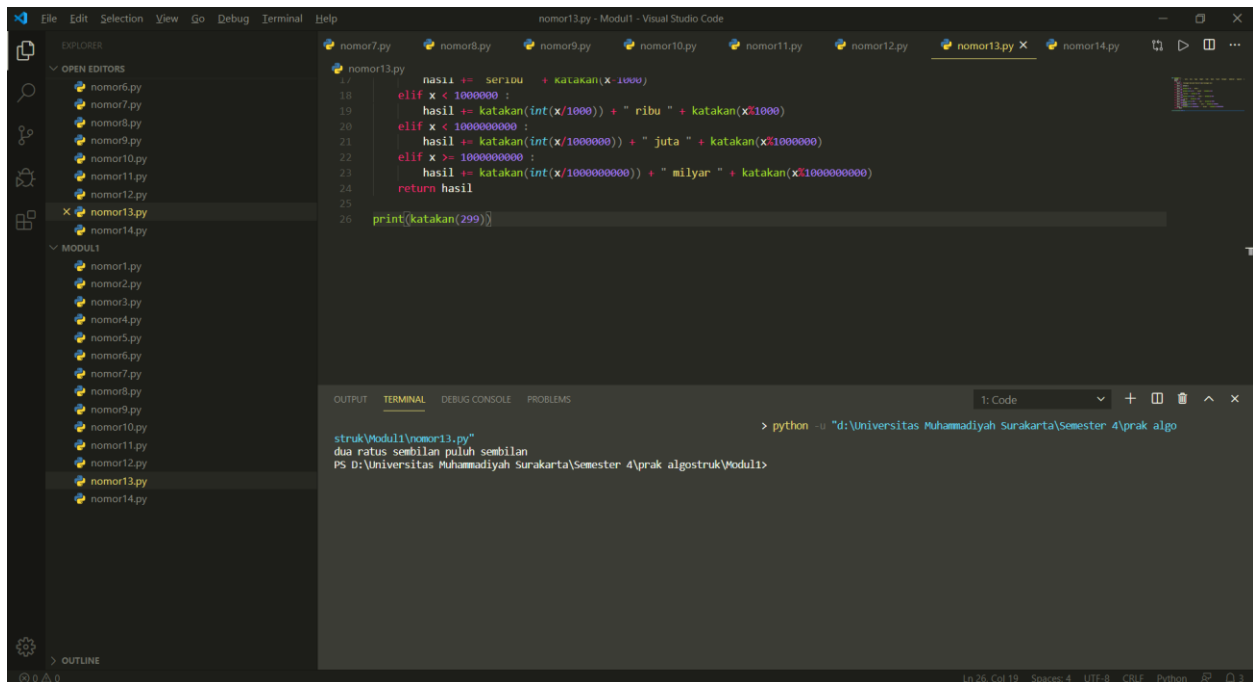
EXPLORER
  OPEN EDITORS
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
    nomor13.py
    nomor14.py
  MODUL1
    nomor1.py
    nomor2.py
    nomor3.py
    nomor4.py
    nomor5.py
    nomor6.py
    nomor7.py
    nomor8.py
    nomor9.py
    nomor10.py
    nomor11.py
    nomor12.py
    nomor13.py
    nomor14.py

nomor12.py
1 import random
2 def tebak():
3     a = random.randrange(1,101)
4     b = -1
5     n = 0
6     print("Permainan tebak angkat.")
7     print("Saya menyimpan sebuah angka bulat antara 1 sampai 100. Coba tebak")
8     while a != b :
9         n = n + 1
10        b = int(input("Masukkan tebakan ke-"+str(n)+":> "))
11        if b < a :
12            print("Itu terlalu kecil. Coba lagi")
13        elif b > a :
14            print("Itu terlalu besar. Coba lagi")
15        else :
16            print("Ya. Anda benar.")
17            break
18    tebak()

OUTPUT TERMINAL DEBUG CONSOLE PROBLEMS
> python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1\nomor12.py"
Permainan tebak angkat.
Saya menyimpan sebuah angka bulat antara 1 sampai 100. Coba tebak
Masukkan tebakan ke-1:> 70
Itu terlalu besar. Coba lagi
Masukkan tebakan ke-2:> 50
Itu terlalu besar. Coba lagi
Masukkan tebakan ke-3:> 40
Ya. Anda benar.
PS D:\Universitas Muhammadiyah Surakarta\Semester 4\prak algostruk\Modul1>

Ln 12, Col 21 Spaces: 4 UTF-8 CRLF Python
```

13. Output file nomor13.py

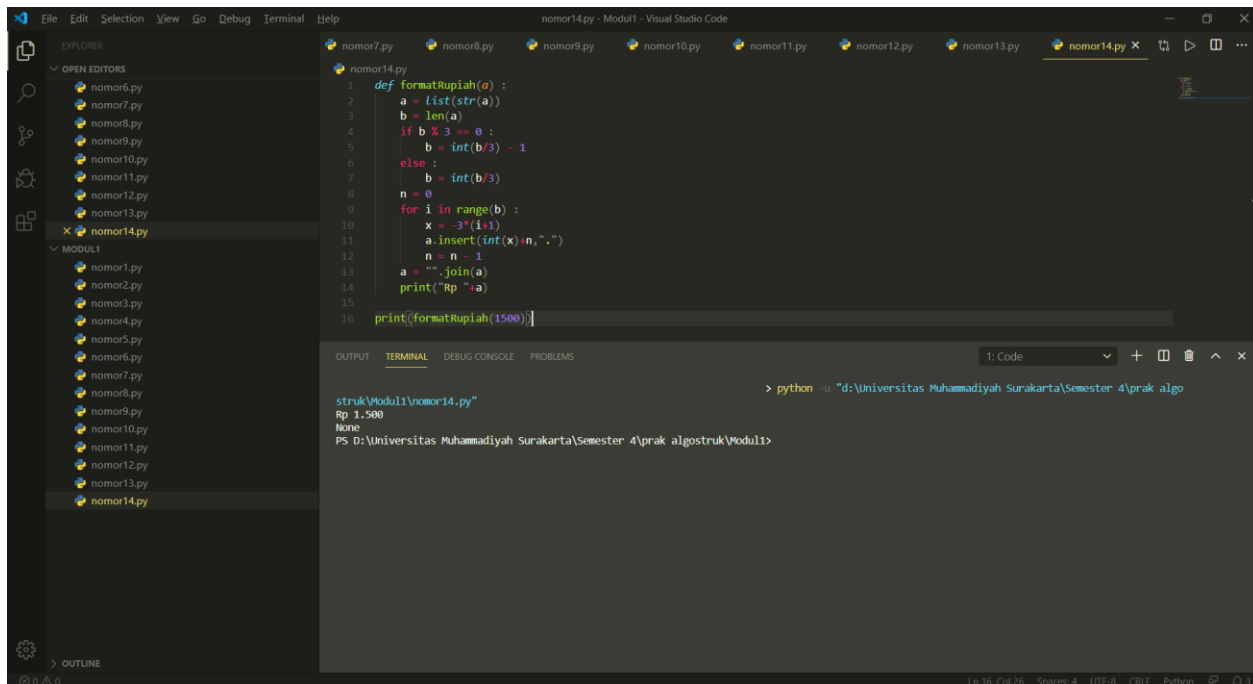


The screenshot shows the Visual Studio Code interface with the file explorer on the left displaying a list of Python files from nomor1.py to nomor14.py. The main editor window shows the code for nomor13.py, which is a function named `katakan` that takes an integer `x` and returns a string representation of the number in Indonesian. The function uses a series of `elif` statements to handle different ranges of `x` and a `return` statement at the end. The code is as follows:

```
17 def katakan(x):
18     hasil = seribu + katakan(x // 1000)
19     elif x < 1000000 :
20         hasil += katakan(int(x/1000)) + " ribu " + katakan(x%1000)
21     elif x < 1000000000 :
22         hasil += katakan(int(x/1000000)) + " juta " + katakan(x%1000000)
23     elif x >= 10000000000 :
24         hasil += katakan(int(x/1000000000)) + " milyar " + katakan(x%1000000000)
25     return hasil
26 print(katakan(299))
```

The terminal at the bottom shows the command `python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algo"` being executed, and the output is `dua ratus sembilan puluh sembilan`.

14. Output file nomor14.py



The screenshot shows the Visual Studio Code interface with the file explorer on the left displaying a list of Python files from nomor1.py to nomor14.py. The main editor window shows the code for nomor14.py, which is a function named `formatRupiah` that takes a string `a` and returns a string representation of the number in Indonesian Rupiah. The function uses a loop to process the string and insert commas as thousands separators. The code is as follows:

```
1 def formatRupiah(a) :
2     a = list(str(a))
3     b = len(a)
4     if b % 3 == 0 :
5         b = int(b/3) - 1
6     else :
7         b = int(b/3)
8     n = 0
9     for i in range(b) :
10         x = -3*(i+1)
11         a.insert(int(x)+n, ",")
12         n = n - 1
13     a = "".join(a)
14     print("Rp " + a)
15
16 print(formatRupiah(1500))
```

The terminal at the bottom shows the command `python -u "d:\Universitas Muhammadiyah Surakarta\Semester 4\prak algo"` being executed, and the output is `Rp 1.500`.