
 Marwadi University Marwadi Chandarana Group 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: Programming With Python (01CT1309)	Aim Write a program to perform different arithmetic operations on numbers in python.	
Experiment No: 01	Date:	Enrollment No:92400133065

Aim: Write a program to perform different arithmetic operations on numbers in python.

IDE:

Arithmetic operations are fundamental to programming, and Python provides straightforward operators to perform these calculations. Let's revisit these basic arithmetic operations, which you've likely encountered in your math classes, and see how they can be used in Python.

Types of Arithmetic Operators in Python

Arithmetic operators in Python are fundamental tools used for performing basic mathematical operations. Here are the primary types of arithmetic operators:

- Addition
- Subtraction
- Multiplication
- Division
- Modulus
- Exponentiation
- Floor Division

Let's take a closer look at each of these operators to understand them better.

Addition

The addition operator in Python is “+”. It is used to add or sum two values.



Python Code:

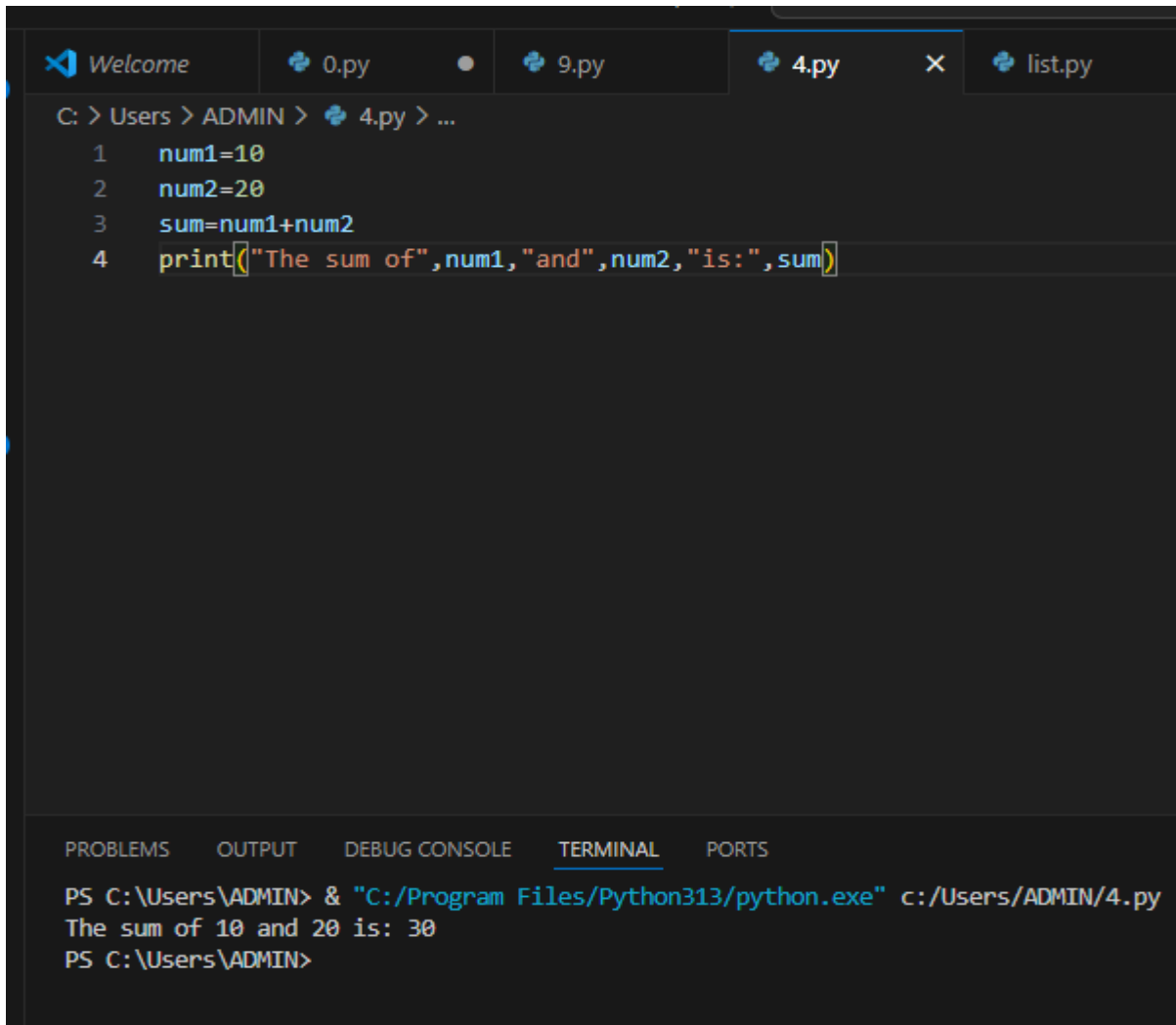
```
num1, num2 = 10, 30

sum= num1+num2

print("The sum of",num1,"and",num2,"is:",sum)
```

Output:

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The screenshot shows a Python IDE with a file named 4.py open. The code in the file is as follows:

```

1 num1=10
2 num2=20
3 sum=num1+num2
4 print("The sum of",num1,"and",num2,"is:",sum)

```

The terminal output at the bottom shows the command to run the program and the resulting output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The sum of 10 and 20 is: 30
PS C:\Users\ADMIN>

```

Subtraction



The subtraction operator in Python is “-”. It is used to subtraction or difference two values.

```
num1, num2 = 10, 30
```

```
sub= num1-num2
```

```
print("The subtraction of",num1,"and",num2,"is:",sub)
```

output:

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```

C: > Users > ADMIN > 4.py > ...
1  num1=10
2  num2=30
3  sub=num1-num2
4  print("The subtraction of",num1,"and",num2,"is:",sub)

```

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The subtraction of 10 and 30 is: -20
PS C:\Users\ADMIN>

```

Multiplication



The Arithmetic Operator in Python for multiplication is “*”. With this operator, we can find the product of two values.

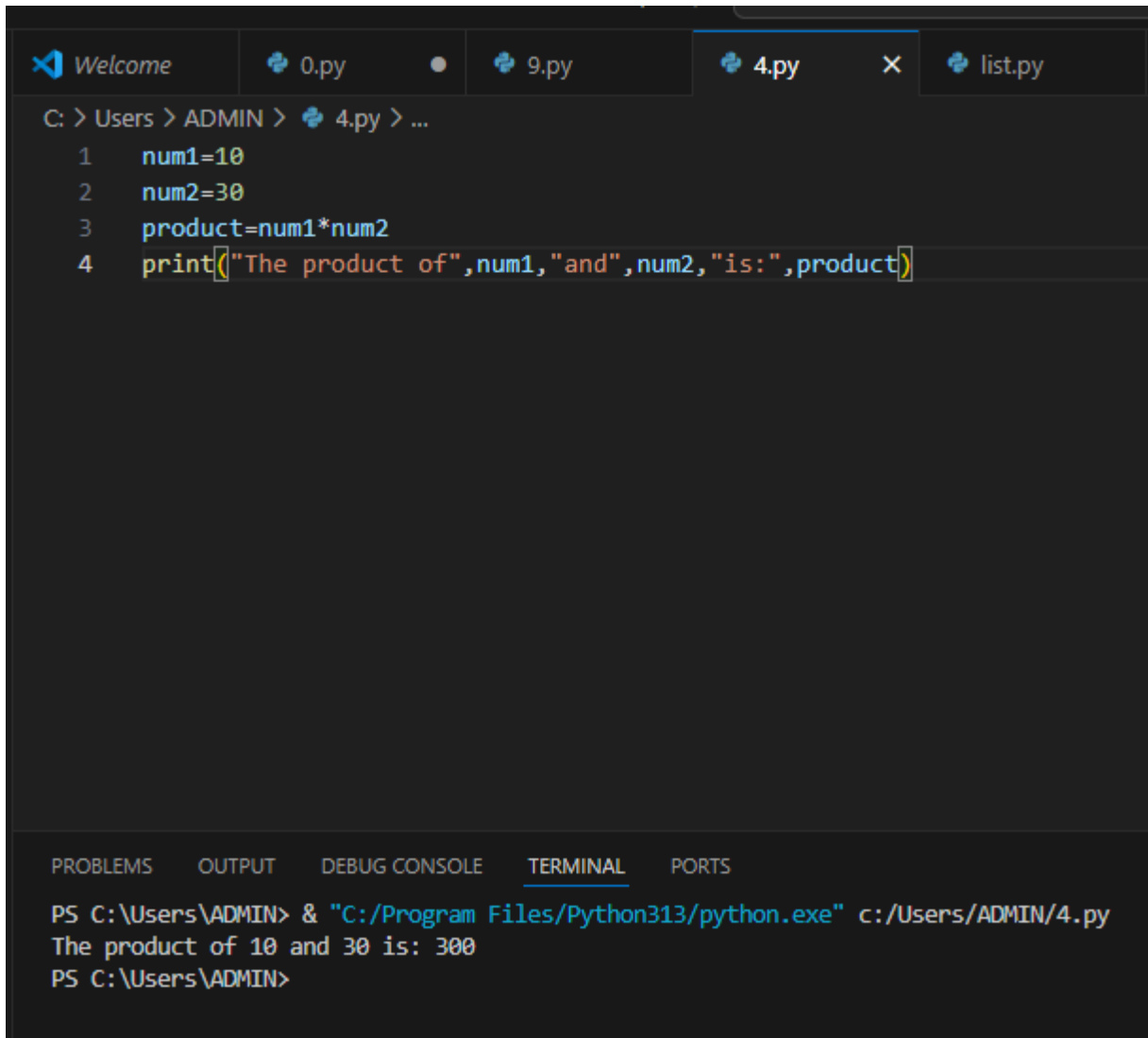
```
num1, num2 = 10, 30
```

```
product= num1*num2
```

```
print("The product of",num1,"and",num2,"is:",product)
```

Output:

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The screenshot shows a Python IDE with a file named '4.py' open. The code in the file is as follows:

```

1  num1=10
2  num2=30
3  product=num1*num2
4  print("The product of",num1,"and",num2,"is:",product)

```

Below the code editor, the 'TERMINAL' tab is active, showing the command to run the program and its output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The product of 10 and 30 is: 300
PS C:\Users\ADMIN>

```



Division

The “/” operator is the division operator in Python. We can find the quotient when the first operand is divided by the second.

```
num1, num2 = 10, 30
```

```
div = num1/num2
```

```
print("The division of",num1,"and",num2,"is:",div)
```

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```

C: > Users > ADMIN > 4.py > ...
1  num1, num2 = 10, 30
2  div = num1/num2
3  print("The division of",num1,"and",num2,"is:",div)
4

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The division of 10 and 30 is: 0.3333333333333333
PS C:\Users\ADMIN>

```



Modulus

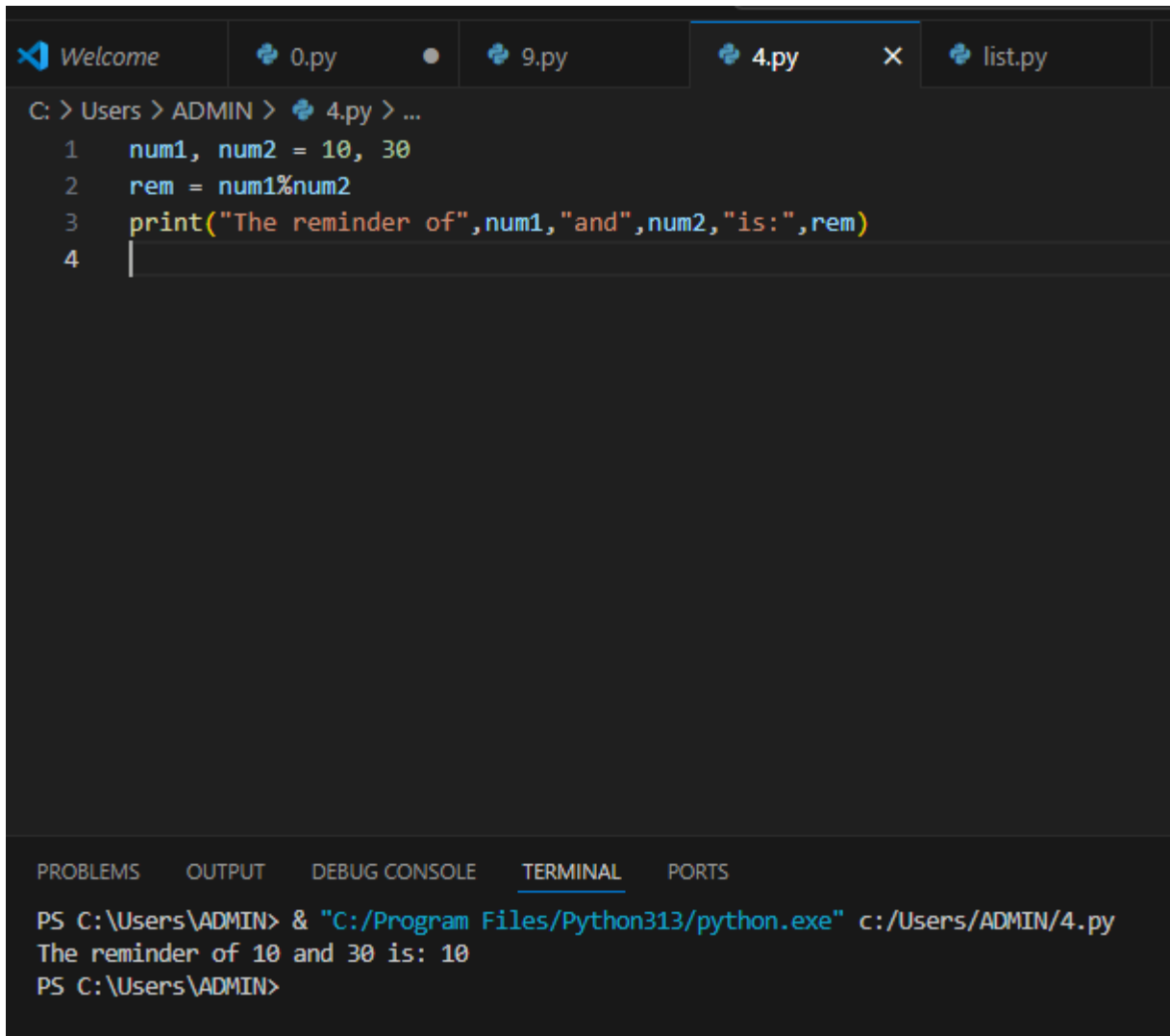
The “%” operator is the division operator in Python. Using this, we can find the remainder when the first operand is divided by the second.

```
num1, num2 = 10, 30
```

```
rem = num1%num2
```

```
print("The reminder of",num1,"and",num2,"is:",rem)
```

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The screenshot shows a Python IDE with a file named 4.py open. The code in the editor is as follows:

```

1  num1, num2 = 10, 30
2  rem = num1%num2
3  print("The remainder of",num1,"and",num2,"is:",rem)
4

```

Below the editor, the terminal output shows the execution of the program:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The remainder of 10 and 30 is: 10
PS C:\Users\ADMIN>

```



Exponentiation

The exponentiation operator in Python is denoted by “**”. It is used to raise the power of the first operand to the power of the second.

```
num1, num2 = 10, 3
```

```
exp = num1**num2
```

```
print("The exponentiation of",num1,"and",num2,"is:",exp)
```

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Output:

Floor Division



It is denoted by “//” in Python. We use it to find the floor of the quotient when the first operand is divided by the second.

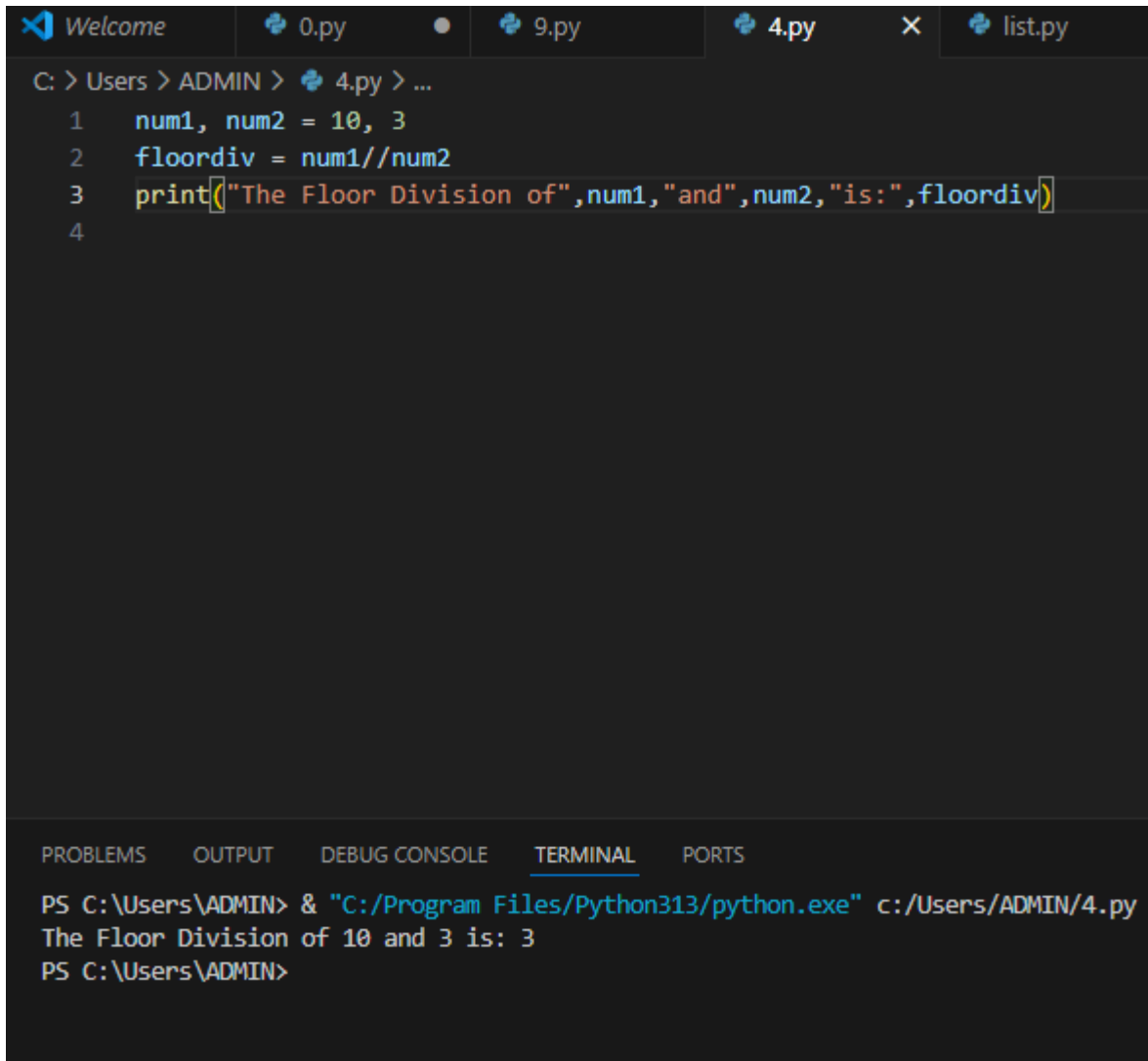
```
num1, num2 = 10, 3
```

```
floordiv = num1//num2
```

```
print("The Floor Division of",num1,"and",num2,"is:",floordiv)
```

Output:

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The screenshot shows a Python IDE with a file named 4.py open. The code in the editor is as follows:

```

1  num1, num2 = 10, 3
2  floordiv = num1//num2
3  print("The Floor Division of",num1,"and",num2,"is:",floordiv)
4

```

Below the editor, the terminal output is shown:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
The Floor Division of 10 and 3 is: 3
PS C:\Users\ADMIN>

```



Task:

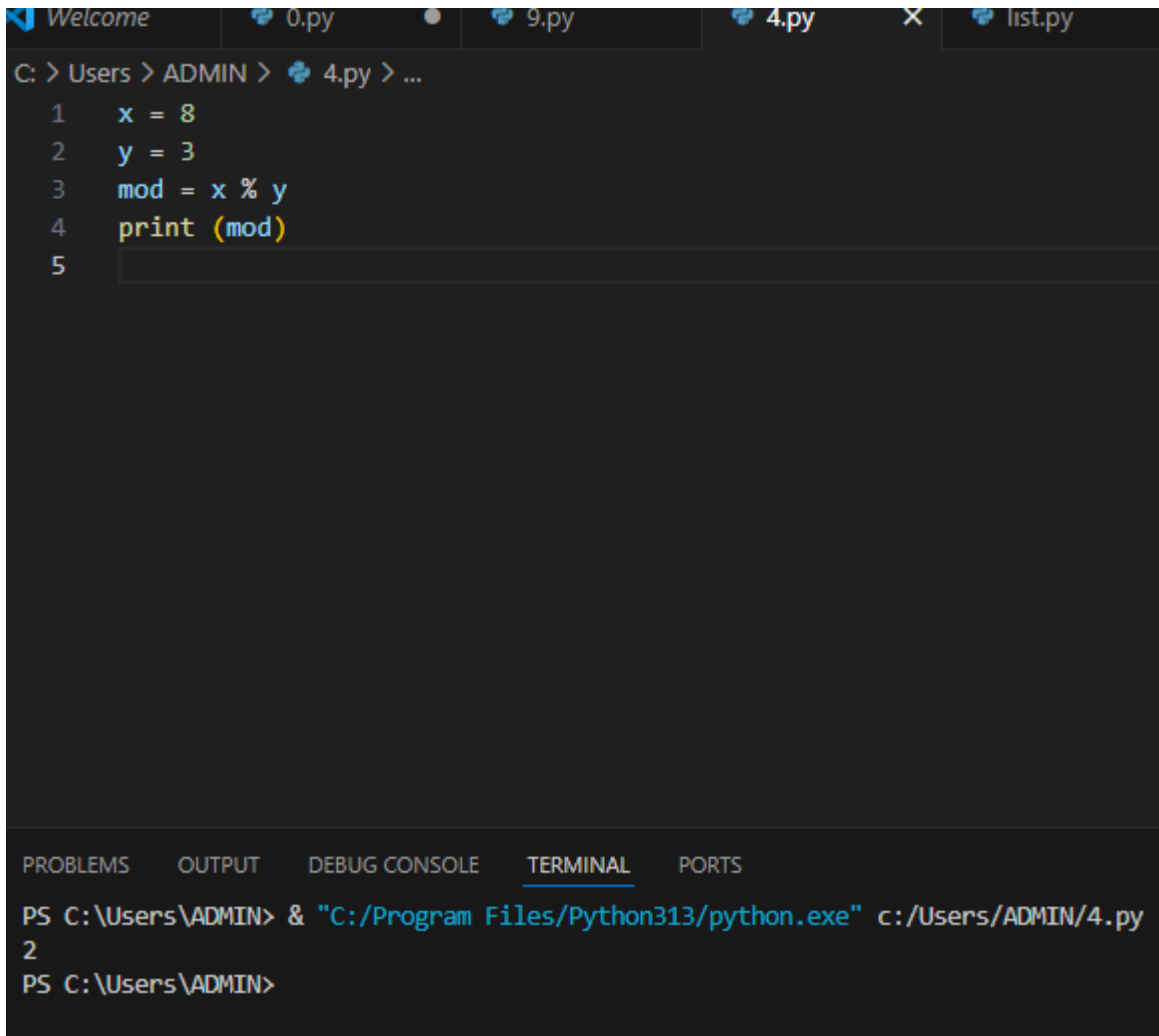
x = 8

y = 3

mod = x % y

print (mod)

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```

Welcome | 0.py | 9.py | 4.py | list.py
C: > Users > ADMIN > 4.py > ...
1  x = 8
2  y = 3
3  mod = x % y
4  print (mod)
5

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
2
PS C:\Users\ADMIN>

```

Output:



a = -5

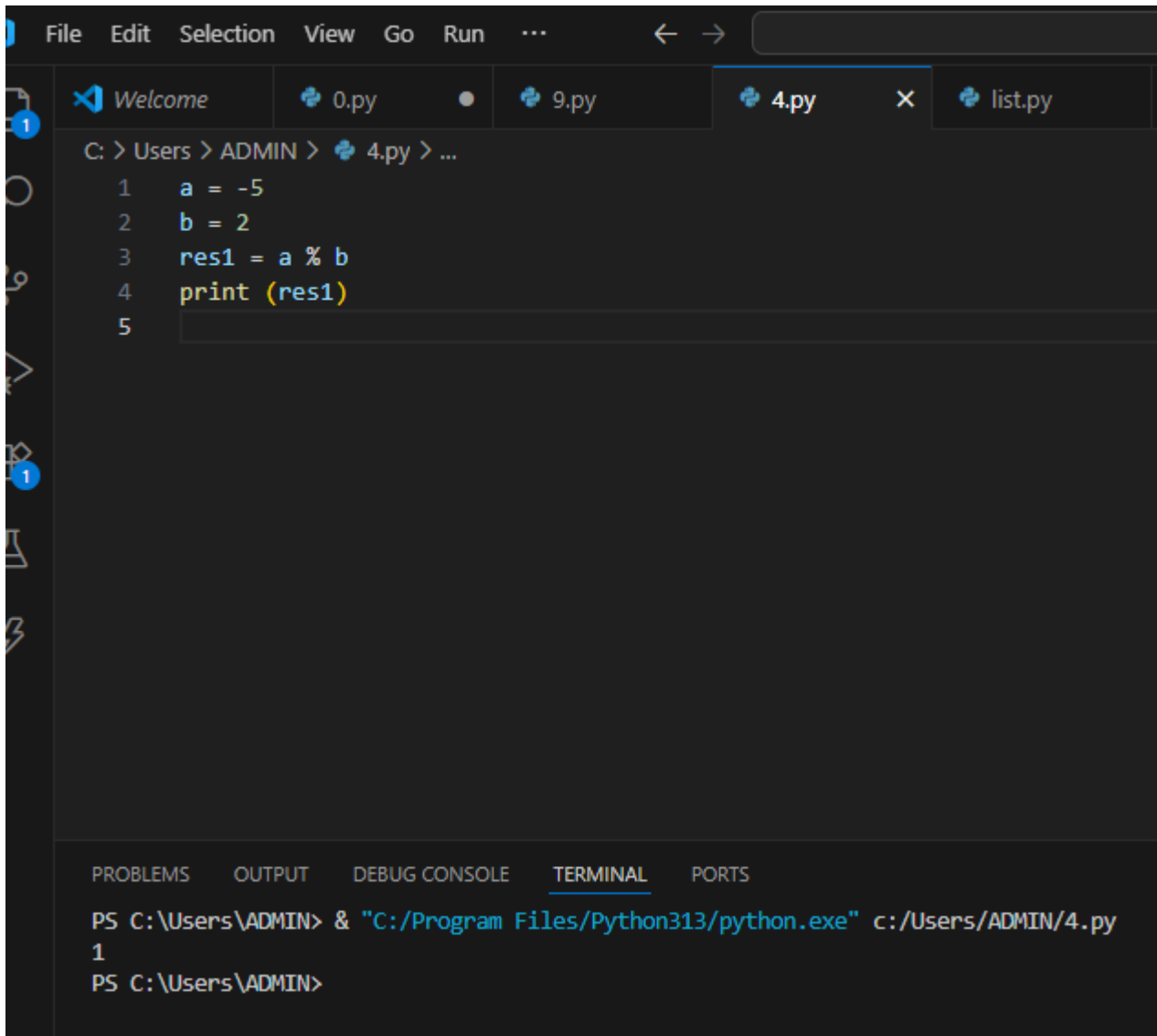
b = 2

res1 = a % b

print (res1)

Output

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The screenshot shows a Python IDE with a menu bar (File, Edit, Selection, View, Go, Run, ...), a toolbar with navigation icons, and a file explorer showing several files: Welcome, 0.py, 9.py, 4.py (selected), and list.py. The main editor window displays the following code:

```

C: > Users > ADMIN > 4.py > ...
1  a = -5
2  b = 2
3  res1 = a % b
4  print (res1)
5

```

At the bottom, there is a terminal window with tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (selected), and PORTS. The terminal shows the command to run the script and its output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
1
PS C:\Users\ADMIN>

```



m = 5

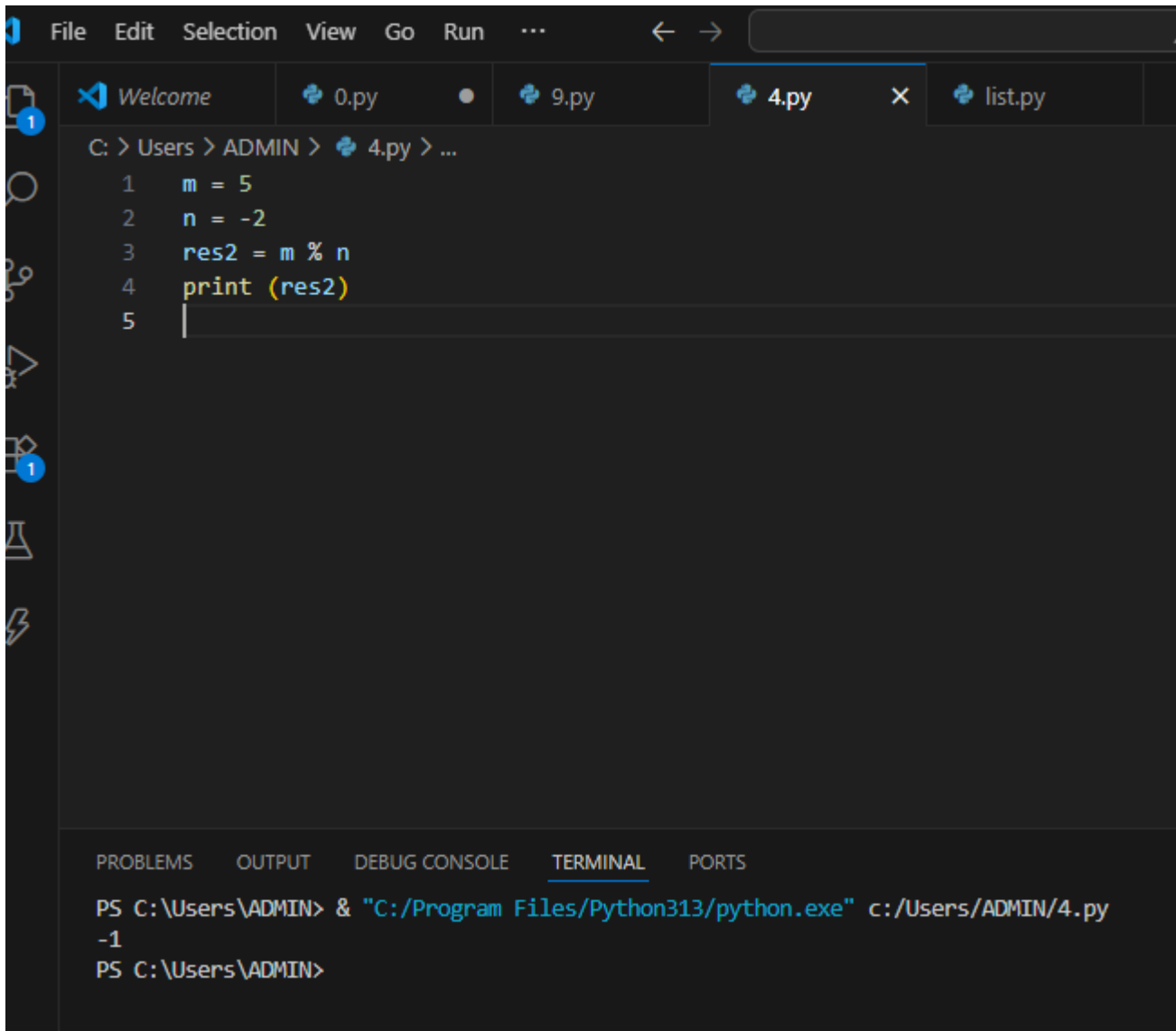
n = -2

res2 = m % n

print (res2)

Output

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The screenshot shows a Python IDE with the following code in a file named 4.py:

```

1  m = 5
2  n = -2
3  res2 = m % n
4  print (res2)
5

```

The terminal output shows the command to run the program and the resulting output:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
-1
PS C:\Users\ADMIN>

```



e = -5

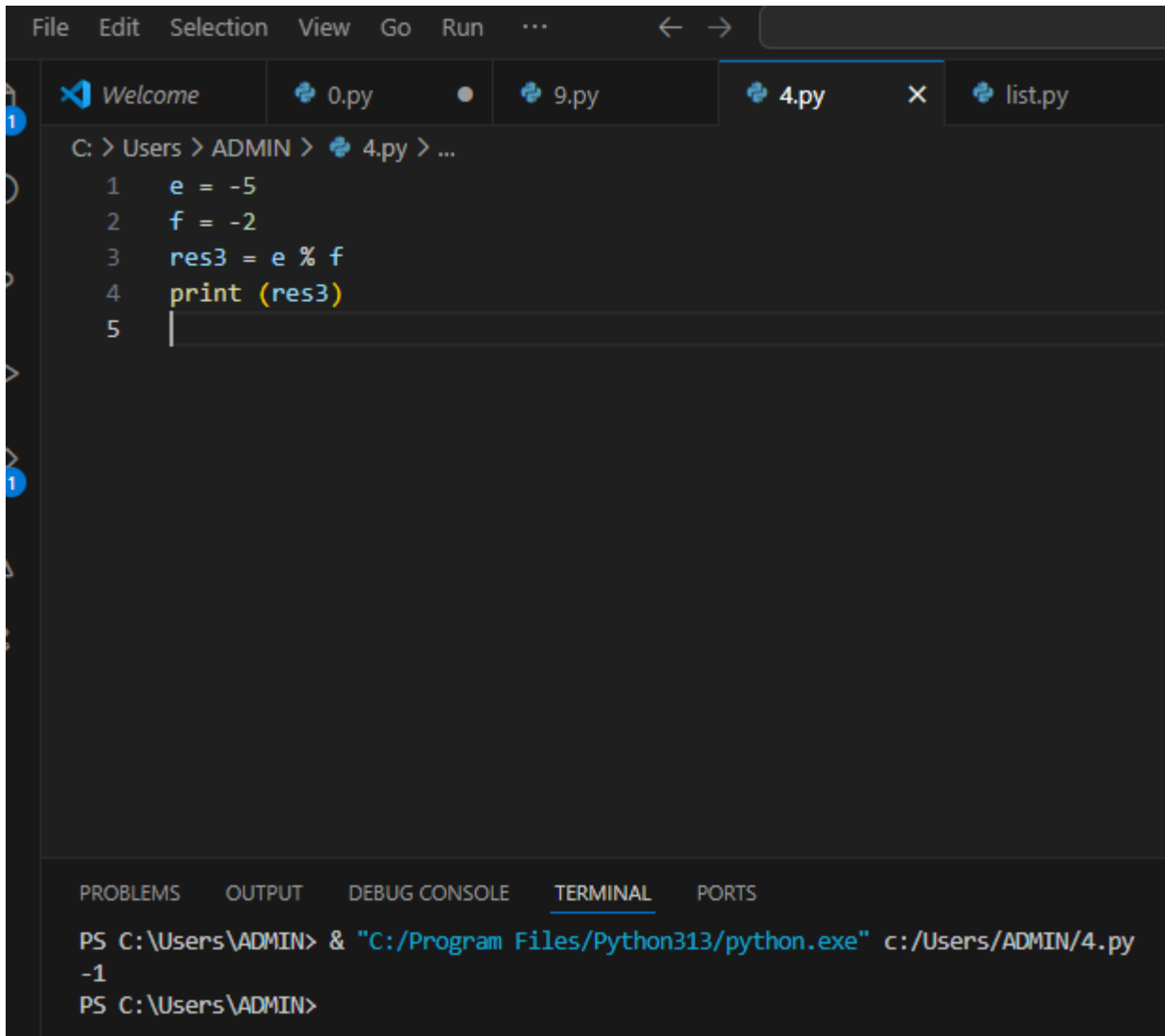
f = -2

res3 = e % f

print (res3)

Output

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The screenshot shows a Python IDE with a menu bar (File, Edit, Selection, View, Go, Run, ...) and a toolbar. The file explorer on the left shows a project named '4.py' with sub-files '0.py', '9.py', '4.py', and 'list.py'. The main editor window displays the following code:

```

C: > Users > ADMIN > 4.py > ...
1  e = -5
2  f = -2
3  res3 = e % f
4  print (res3)
5

```

The bottom panel shows the 'TERMINAL' tab with the following output:

```



PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
-1
PS C:\Users\ADMIN>

```

Order of precedence of Arithmetic operators in Python

Arithmetic Operators in Python follow a basic order of precedence. When more than one operator is used, they are executed according to this order:

Operator	Purpose
()	Parentheses
**	Exponent

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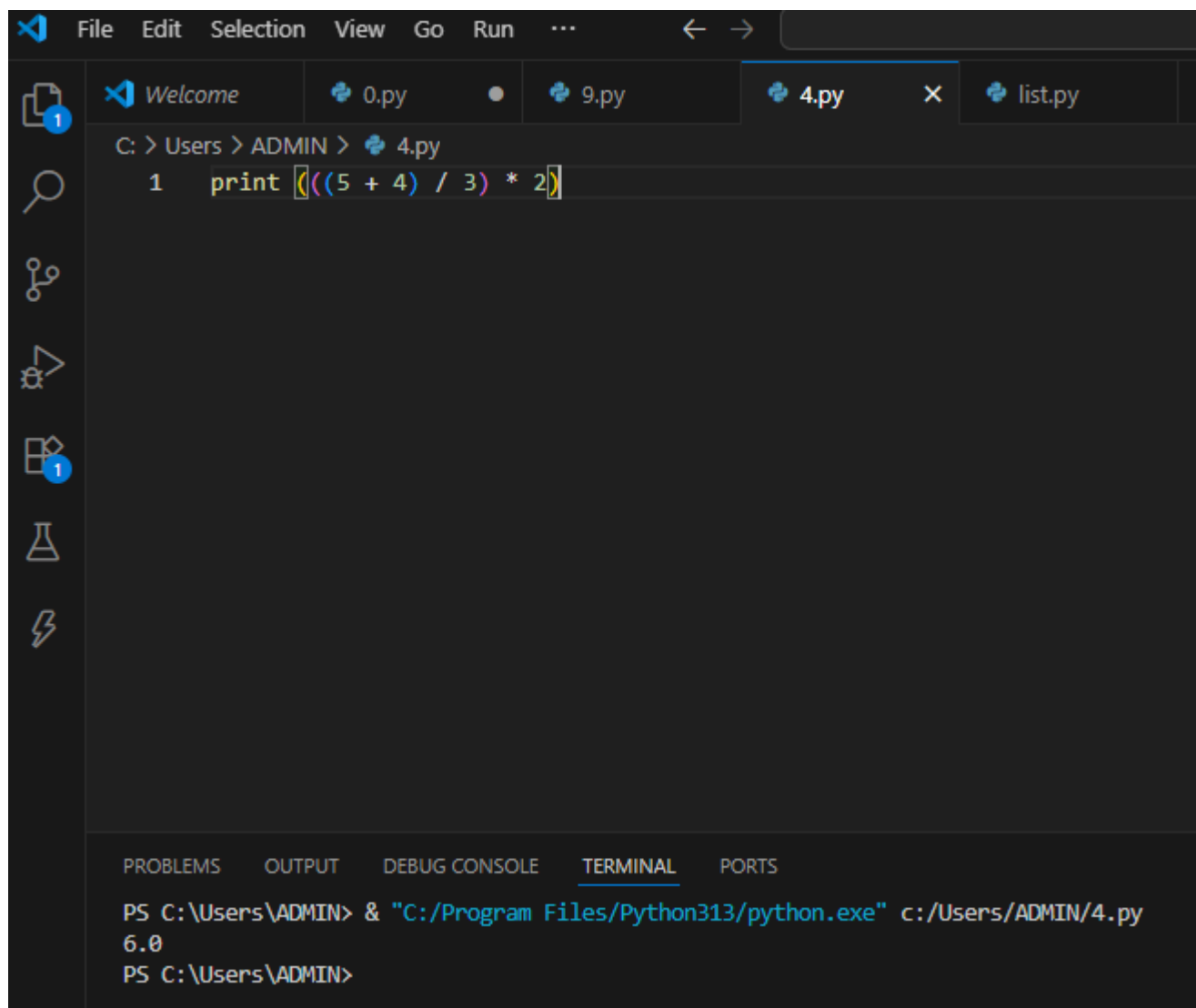
%, *, /, // Modulos, Multiplication, Division and Floor division

+, - Addition and Subtraction

The operator listed at the top of the table will be executed first.

```
print (((5 + 4) / 3) * 2)
```

Output





```

File Edit Selection View Go Run ...
Welcome 0.py 9.py 4.py list.py
C: > Users > ADMIN > 4.py
1 print (((5 + 4) / 3) * 2)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
6.0
PS C:\Users\ADMIN>

```

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```
x = 3
```

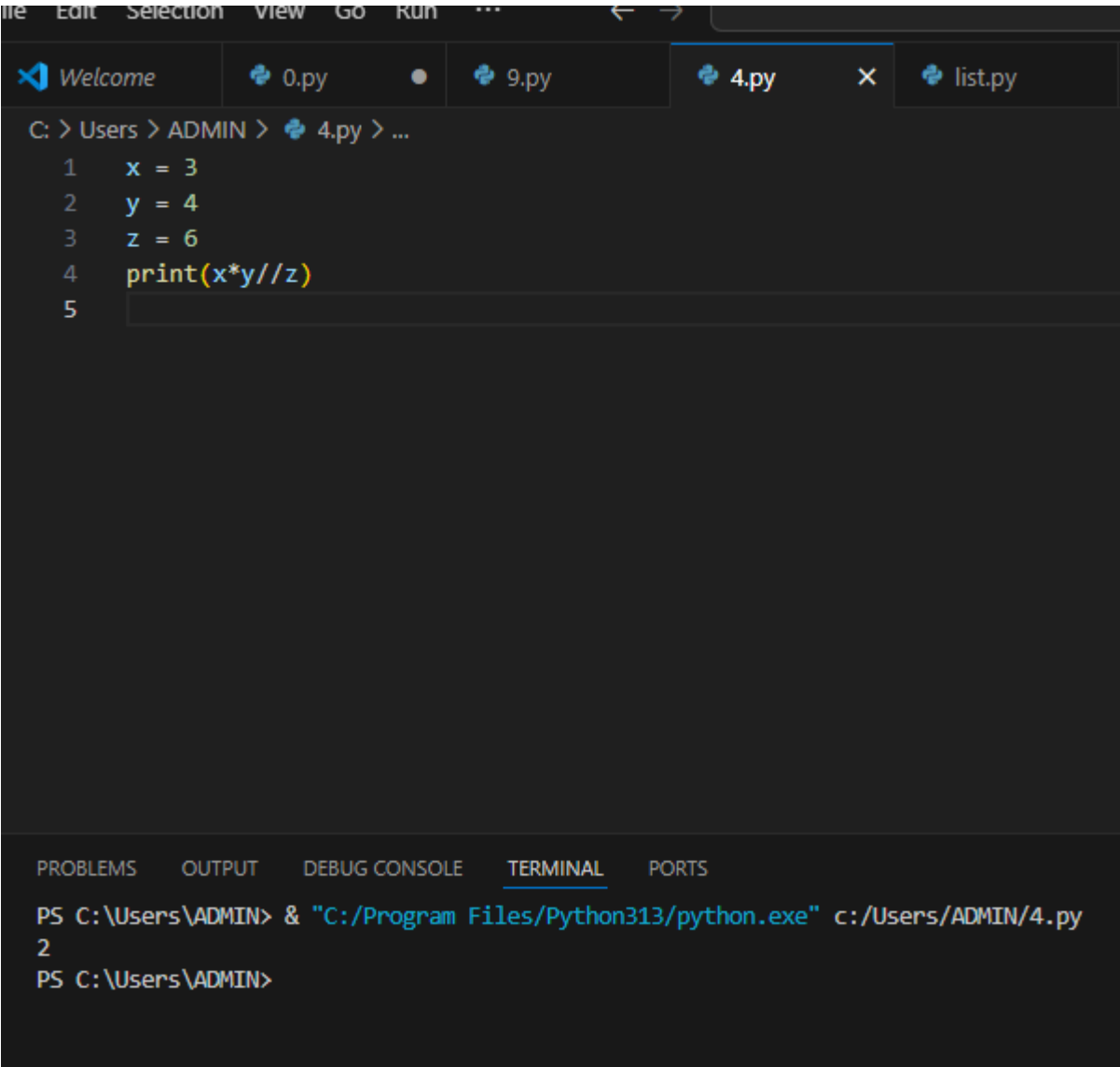
```
y = 4
```



```
z = 6
```

```
print(x*y//z)
```

```
print(x*(y//z))
```

Output:



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x = 2



y = 3

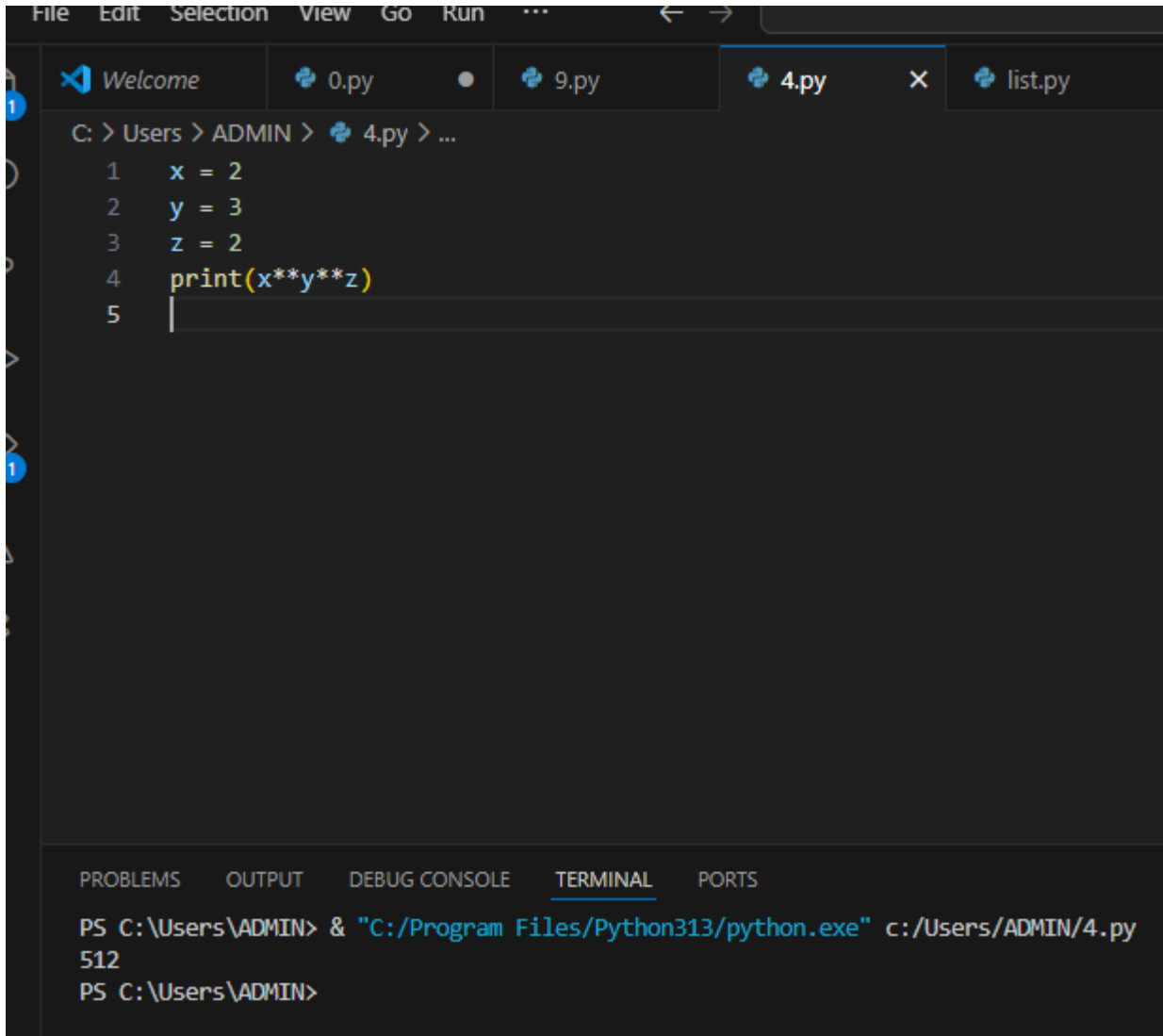
z = 2

print(x**y**z)

print((x**y)**z)

Output

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The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. The file explorer on the left shows a project structure with files 0.py, 9.py, 4.py, and list.py. The editor window displays the following code in file 4.py:

```

1  x = 2
2  y = 3
3  z = 2
4  print(x**y**z)
5



```

The bottom panel shows the TERMINAL output:

```

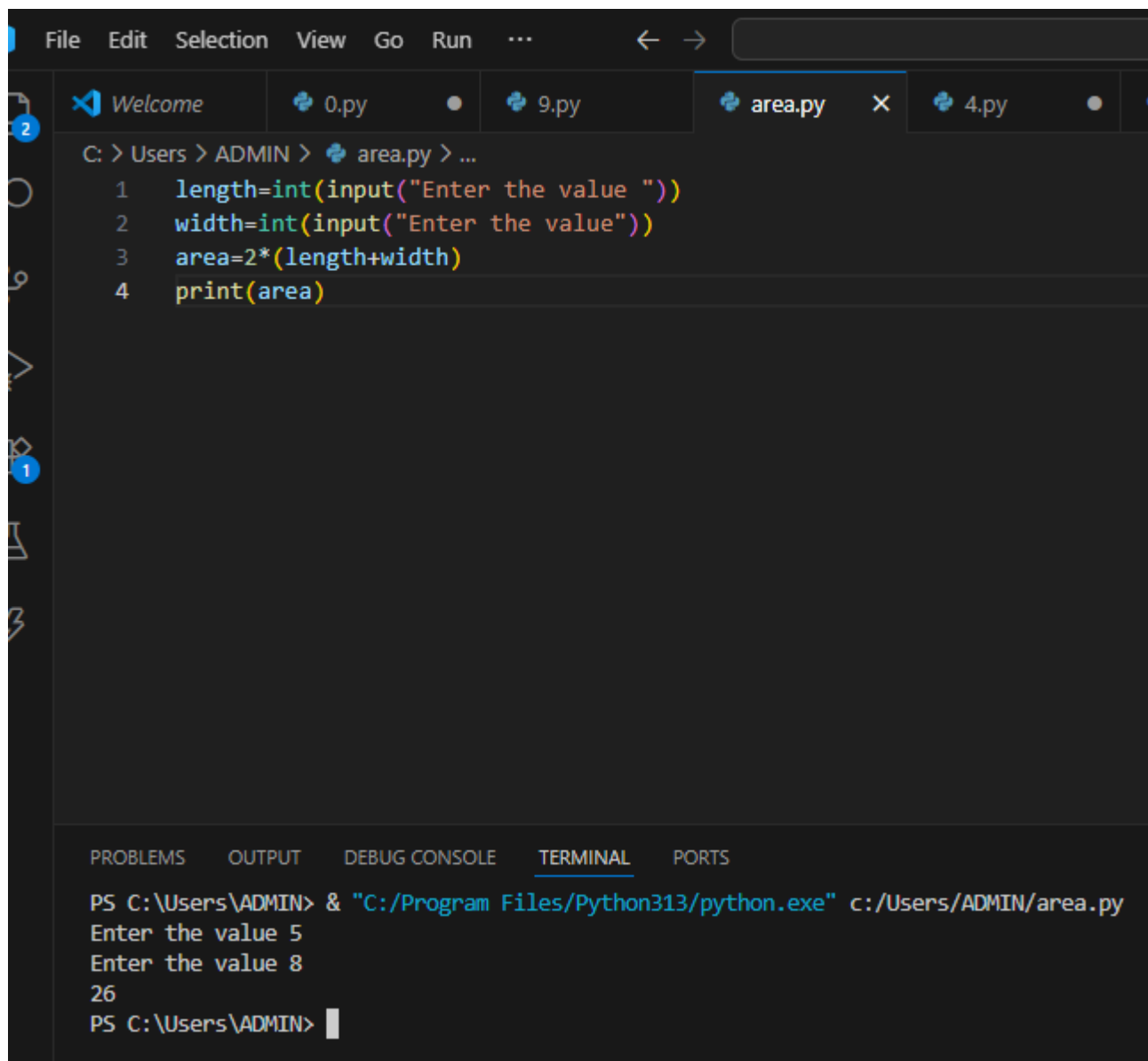
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/4.py
512
PS C:\Users\ADMIN>

```


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Post Lab

Write a python code for calculating the Area and Perimeter of a Rectangle





```

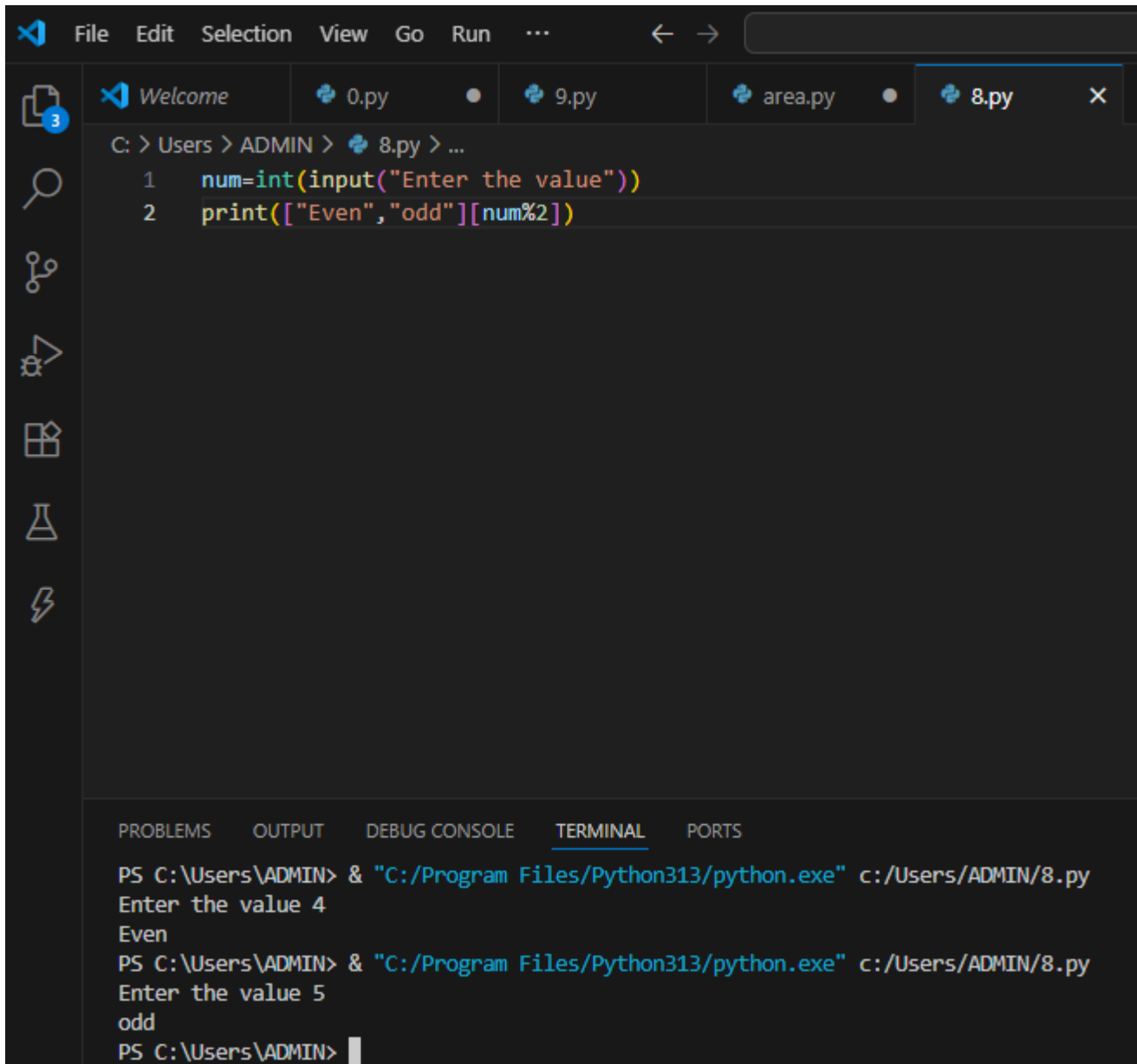
File Edit Selection View Go Run ...
Welcome 0.py 9.py area.py 4.py
C: > Users > ADMIN > area.py > ...
1 length=int(input("Enter the value "))
2 width=int(input("Enter the value"))
3 area=2*(length+width)
4 print(area)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/area.py
Enter the value 5
Enter the value 8
26
PS C:\Users\ADMIN>

```

Write a python code for testing if a number is even or odd

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The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. The file explorer on the left shows a project named '8.py' with a subfolder '8.py' containing files '0.py', '9.py', 'area.py', and '8.py'. The main editor window displays the following Python code:

```

1 num=int(input("Enter the value"))
2 print(["Even","odd"][num%2])

```



The bottom panel shows the TERMINAL output:

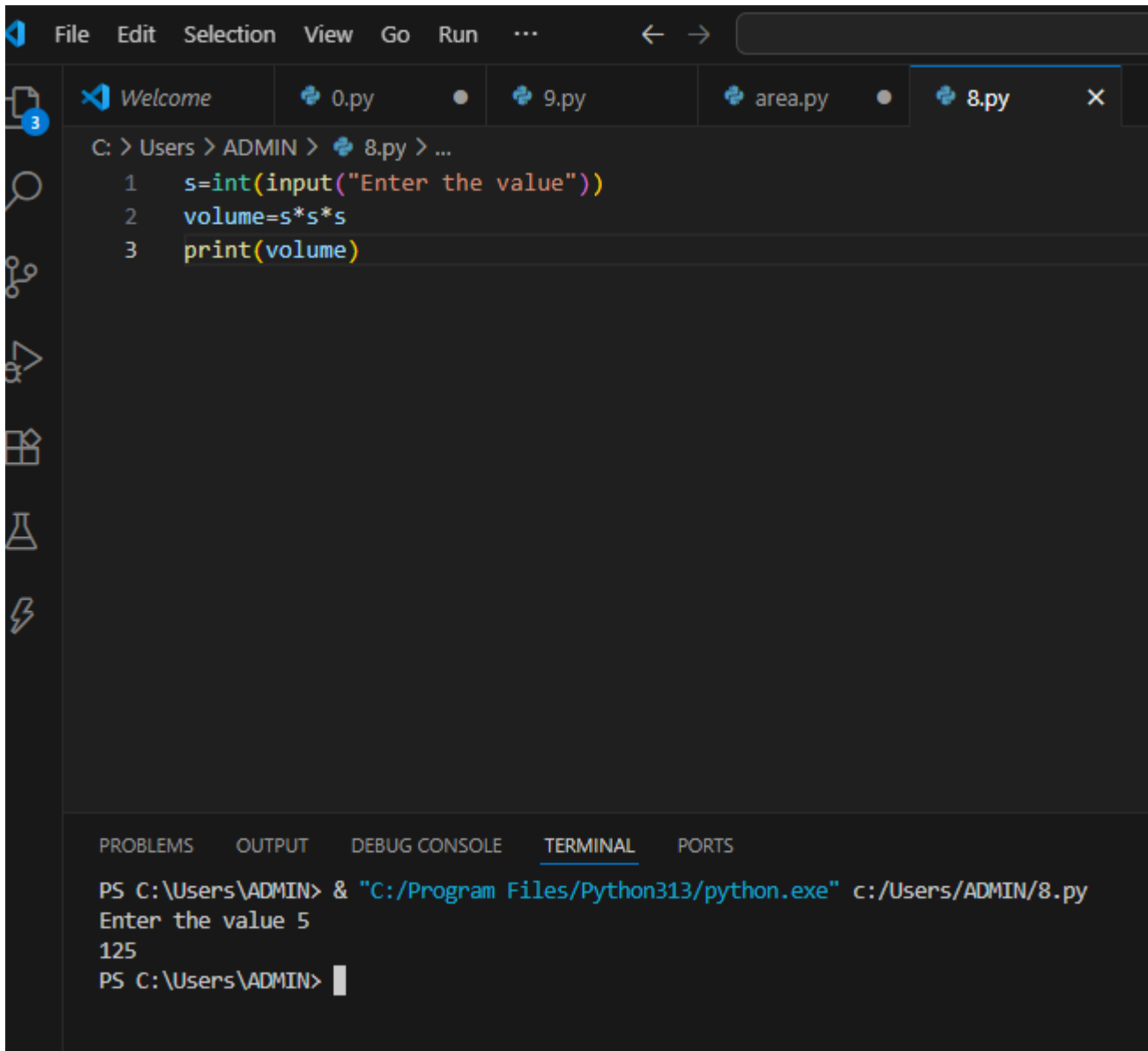
```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/8.py
Enter the value 4
Even
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/8.py
Enter the value 5
odd
PS C:\Users\ADMIN>

```

Write a python code for calculate the area and volume of the Cube.

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The screenshot shows a Python IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, and a search icon. The file explorer on the left shows a project named '8.py'. The main editor window displays the following Python code:

```

1 s=int(input("Enter the value"))
2 volume=s*s*s
3 print(volume)

```



The bottom panel shows the TERMINAL output:

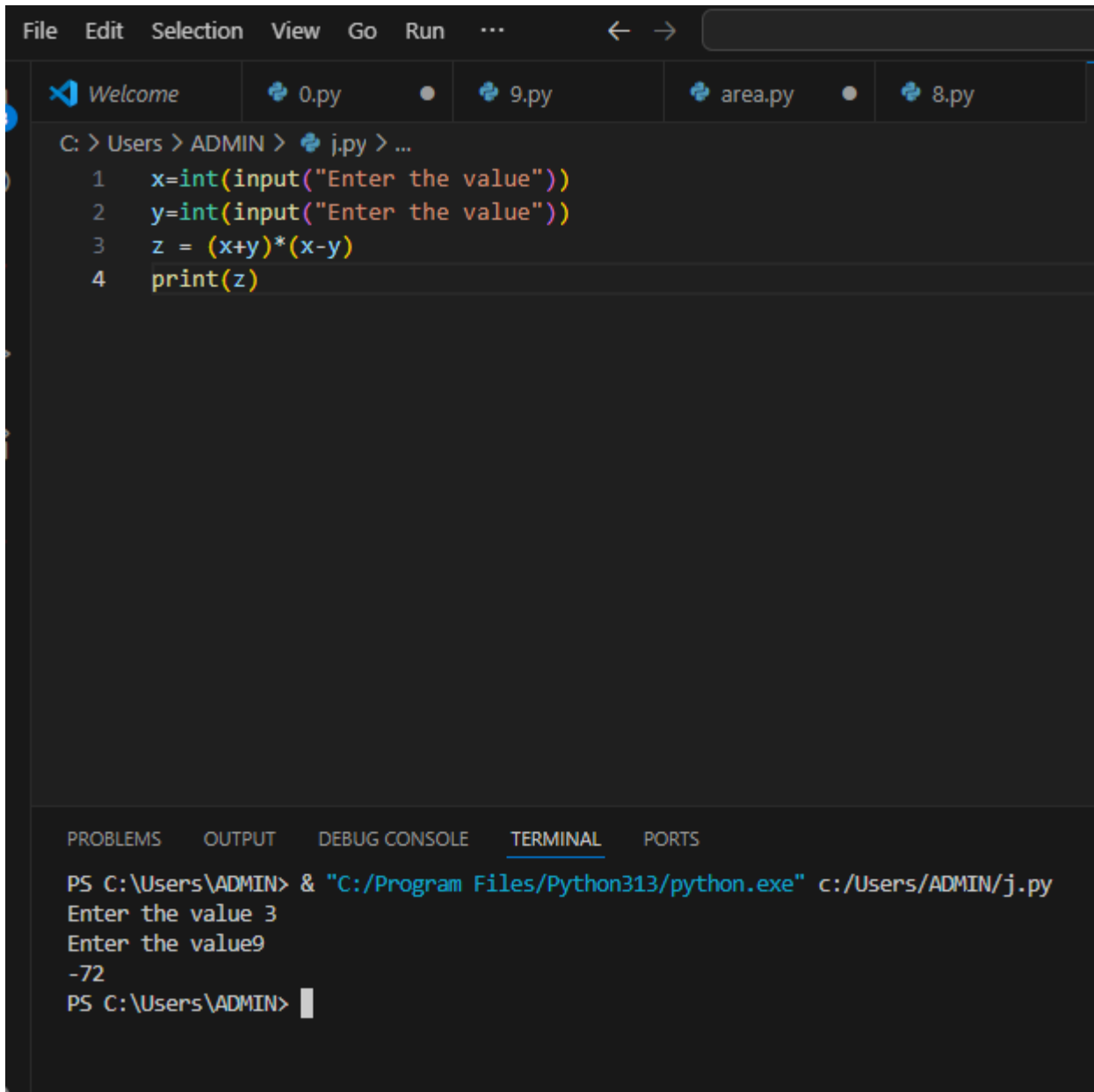
```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/8.py
Enter the value 5
125
PS C:\Users\ADMIN>

```

Write a python code to solve the equation $z = (x+y)*(x-y)$

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```

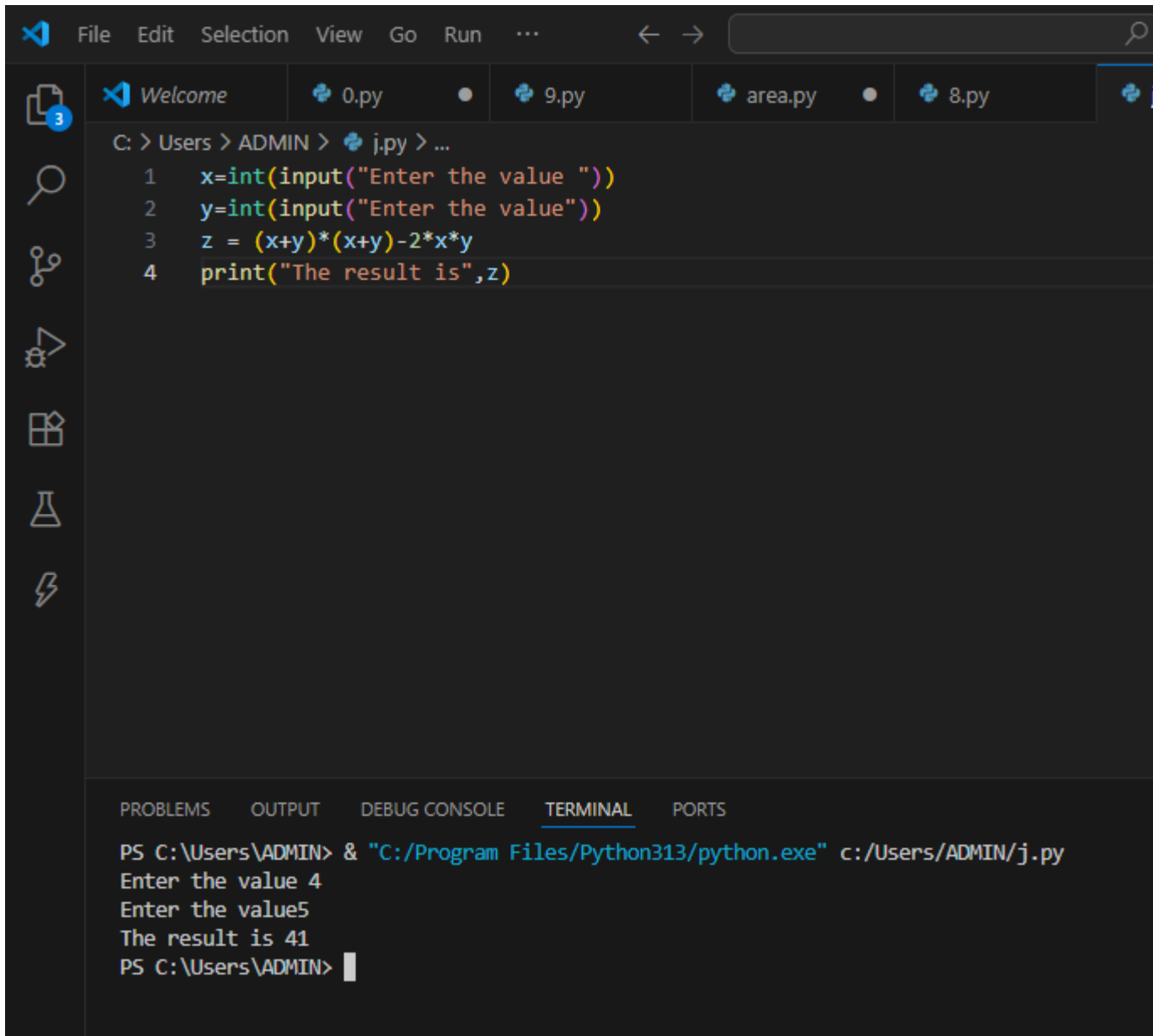
File Edit Selection View Go Run ...
Welcome 0.py 9.py area.py 8.py
C: > Users > ADMIN > j.py > ...
1  x=int(input("Enter the value"))
2  y=int(input("Enter the value"))
3  z = (x+y)*(x-y)
4  print(z)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/j.py
Enter the value 3
Enter the value 9
-72
PS C:\Users\ADMIN>

```

Write a python code to solve the equation $z = (x+y)*(x+y)-2xy$; write a comment on it.

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```



C: > Users > ADMIN > j.py > ...
1  x=int(input("Enter the value "))
2  y=int(input("Enter the value"))
3  z = (x+y)*(x+y)-2*x*y
4  print("The result is",z)

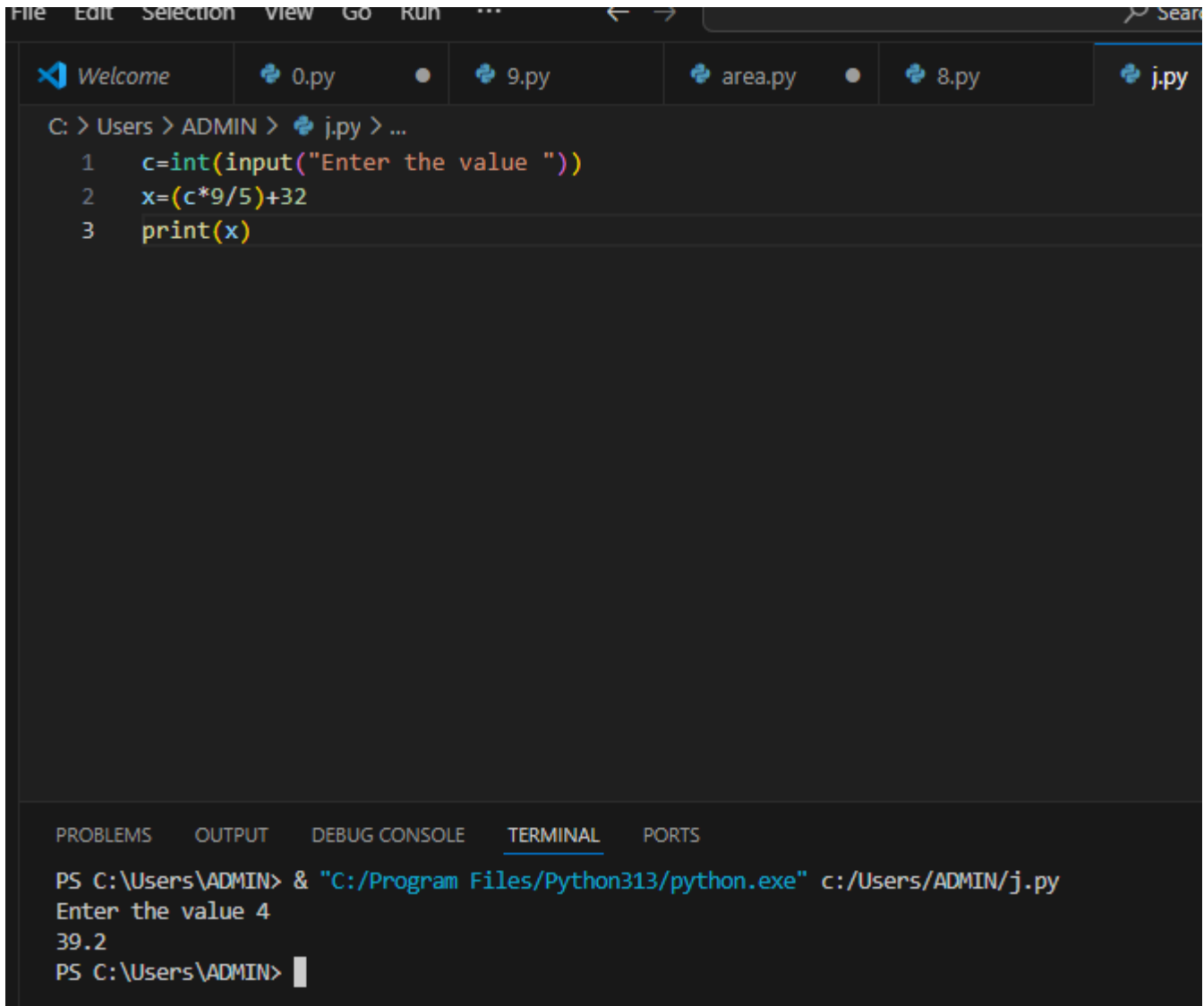
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/j.py
Enter the value 4
Enter the value5
The result is 41
PS C:\Users\ADMIN>

```

Write a python code for Converting Celsius to Fahrenheit

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The screenshot shows a Python IDE with a file explorer at the top displaying several files: 0.py, 9.py, area.py, 8.py, and j.py. The main editor window shows the following Python code:

```

C: > Users > ADMIN > j.py > ...
1  c=int(input("Enter the value "))
2  x=(c*9/5)+32
3  print(x)

```

At the bottom, the TERMINAL pane shows the execution of the program:

```

PS C:\Users\ADMIN> & "C:/Program Files/Python313/python.exe" c:/Users/ADMIN/j.py
Enter the value 4
39.2
PS C:\Users\ADMIN>

```