

 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: 02	Date:14-7-2025	Enrollment No:92400133108

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

IDE: VS-Code

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:

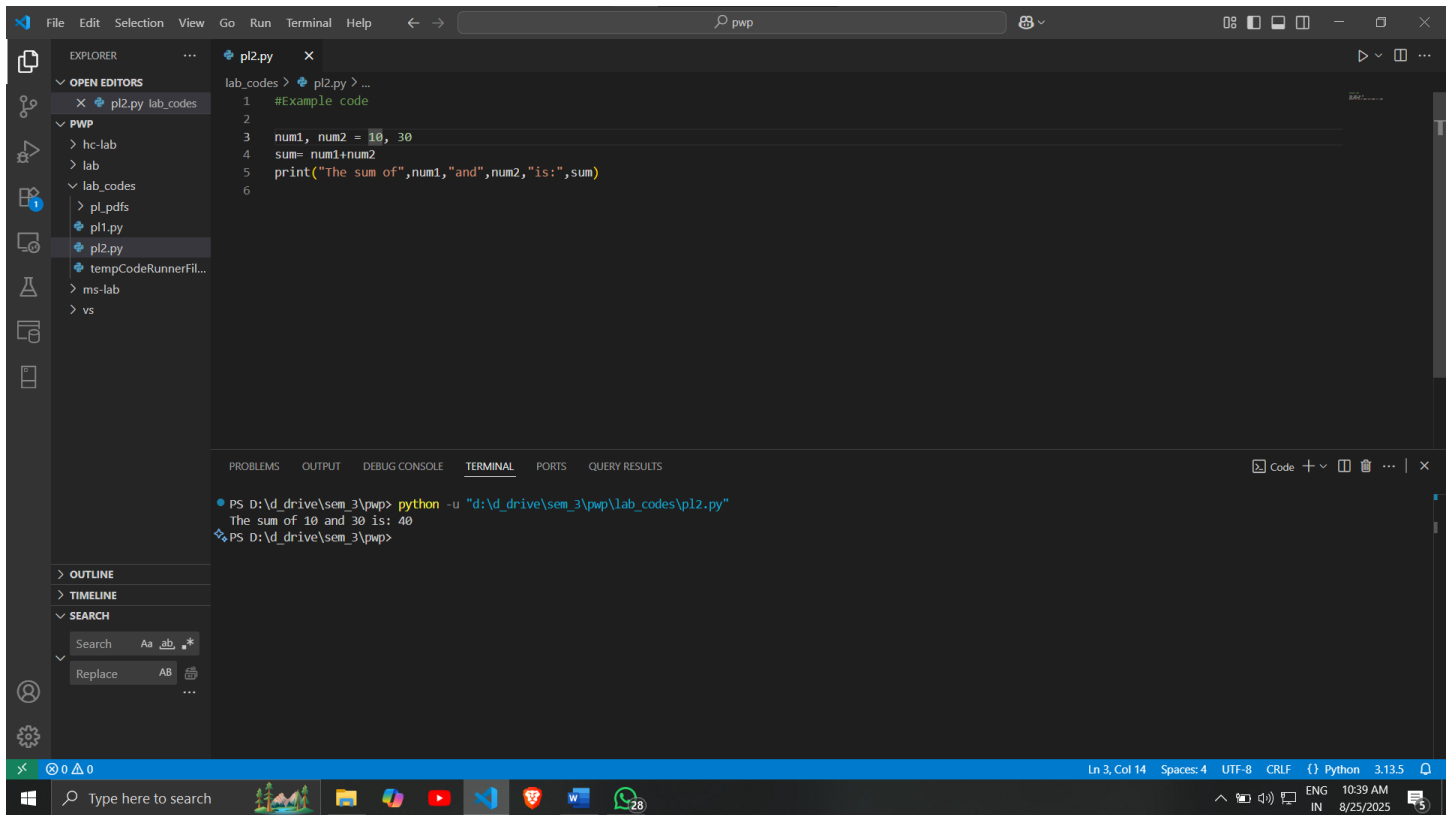
```
num1, num2 = 10, 30

sum= num1+num2

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

Output:

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```

lab_codes > pl2.py > ...
1  #Example code
2
3  num1, num2 = 10, 30
4  sum= num1+num2
5  print("The sum of",num1,"and",num2,"is:",sum)
6

```

```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
The sum of 10 and 30 is: 40
PS D:\d_drive\sem_3\pwp>

```

Subtraction



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

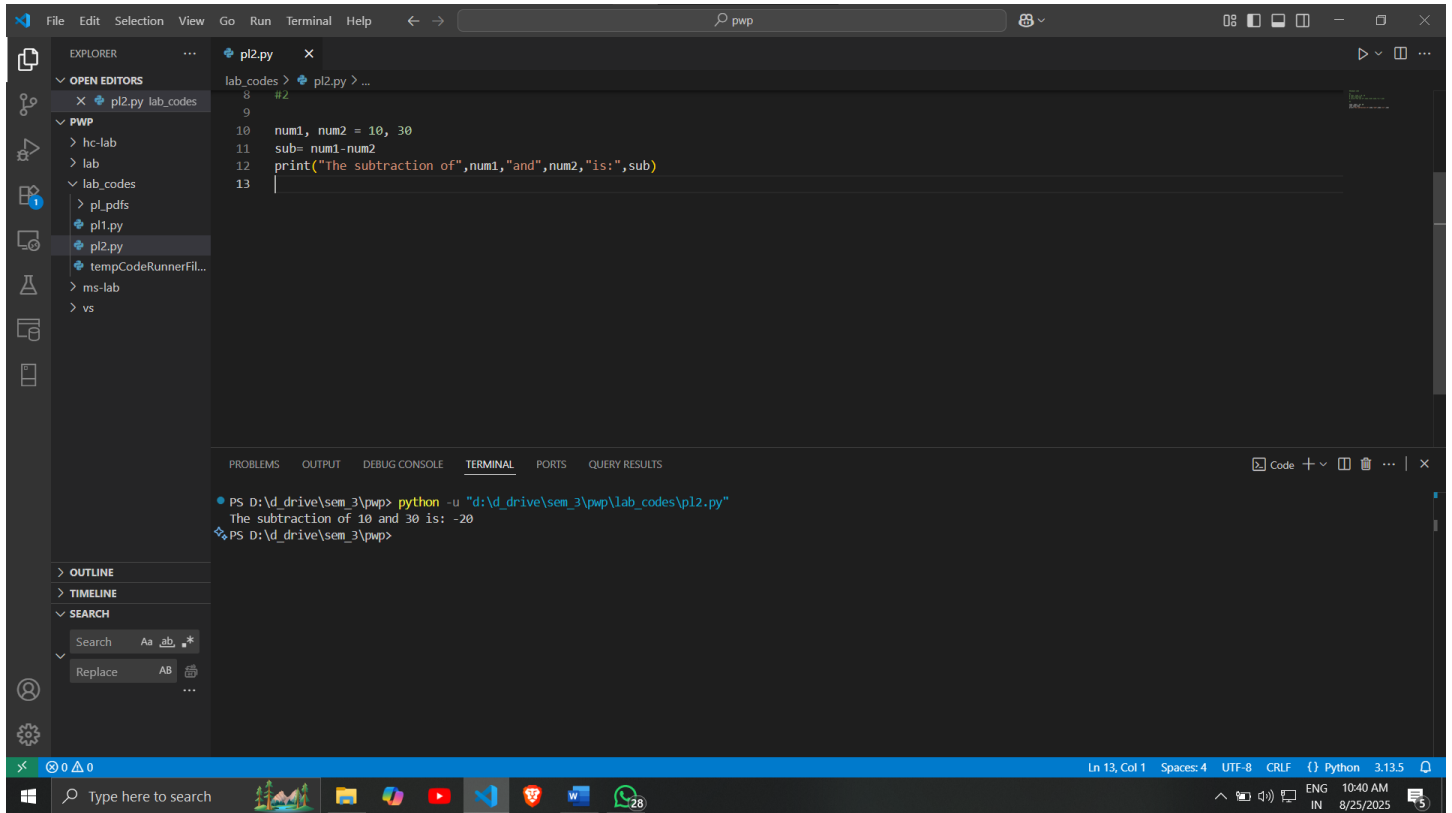
num1, num2 = 10, 30

sub= num1-num2

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

output:

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```

8  #2
9
10 num1, num2 = 10, 30
11 sub= num1-num2
12 print("The subtraction of",num1,"and",num2,"is:",sub)
13

```

```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
The subtraction of 10 and 30 is: -20
PS D:\d_drive\sem_3\pwp>

```

Multiplication



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

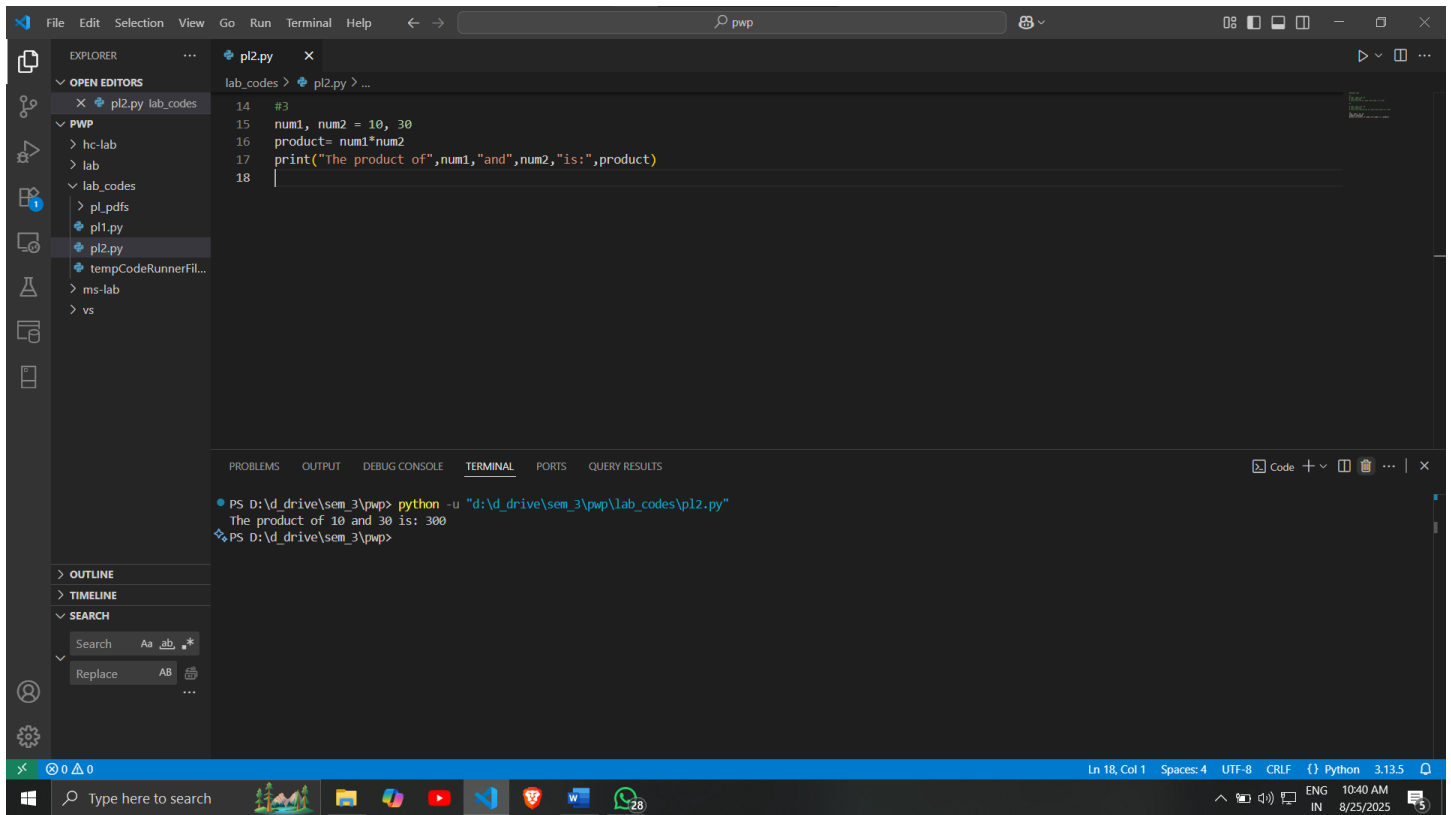
```
num1, num2 = 10, 30
```

```
product= num1*num2
```

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

Output:

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```

14 #3
15 num1, num2 = 10, 30
16 product= num1*num2
17 print("The product of",num1,"and",num2,"is:",product)
18

```

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
The product of 10 and 30 is: 300
PS D:\drive\sem_3\pwp>

```

Division



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

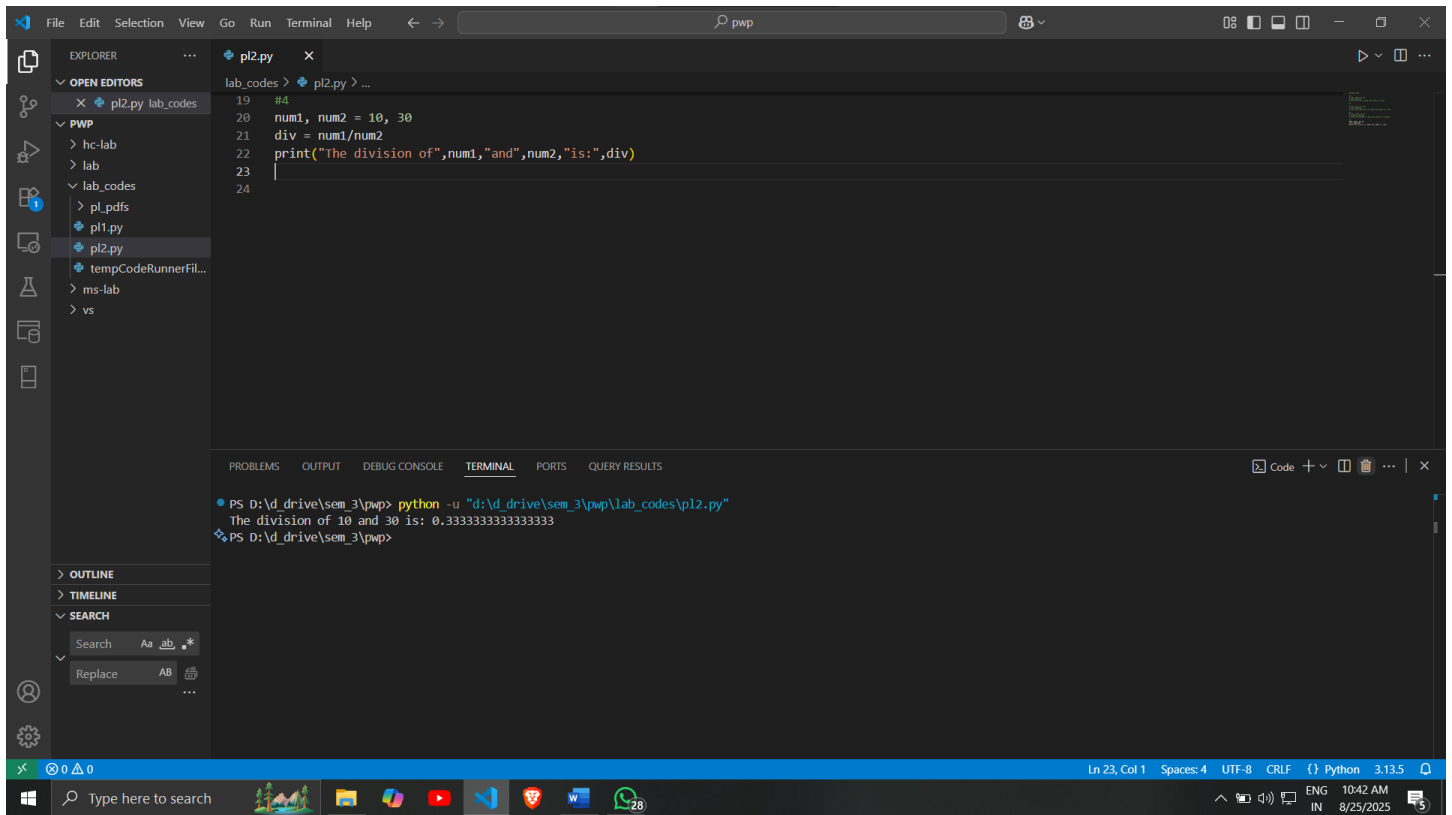
```
num1, num2 = 10, 30
```

```
div = num1/num2
```

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

Output

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```

19 #4
20 num1, num2 = 10, 30
21 div = num1/num2
22 print("The division of",num1,"and",num2,"is:",div)
23
24

```

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
The division of 10 and 30 is: 0.3333333333333333
PS D:\drive\sem_3\pwp>

```

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.



```

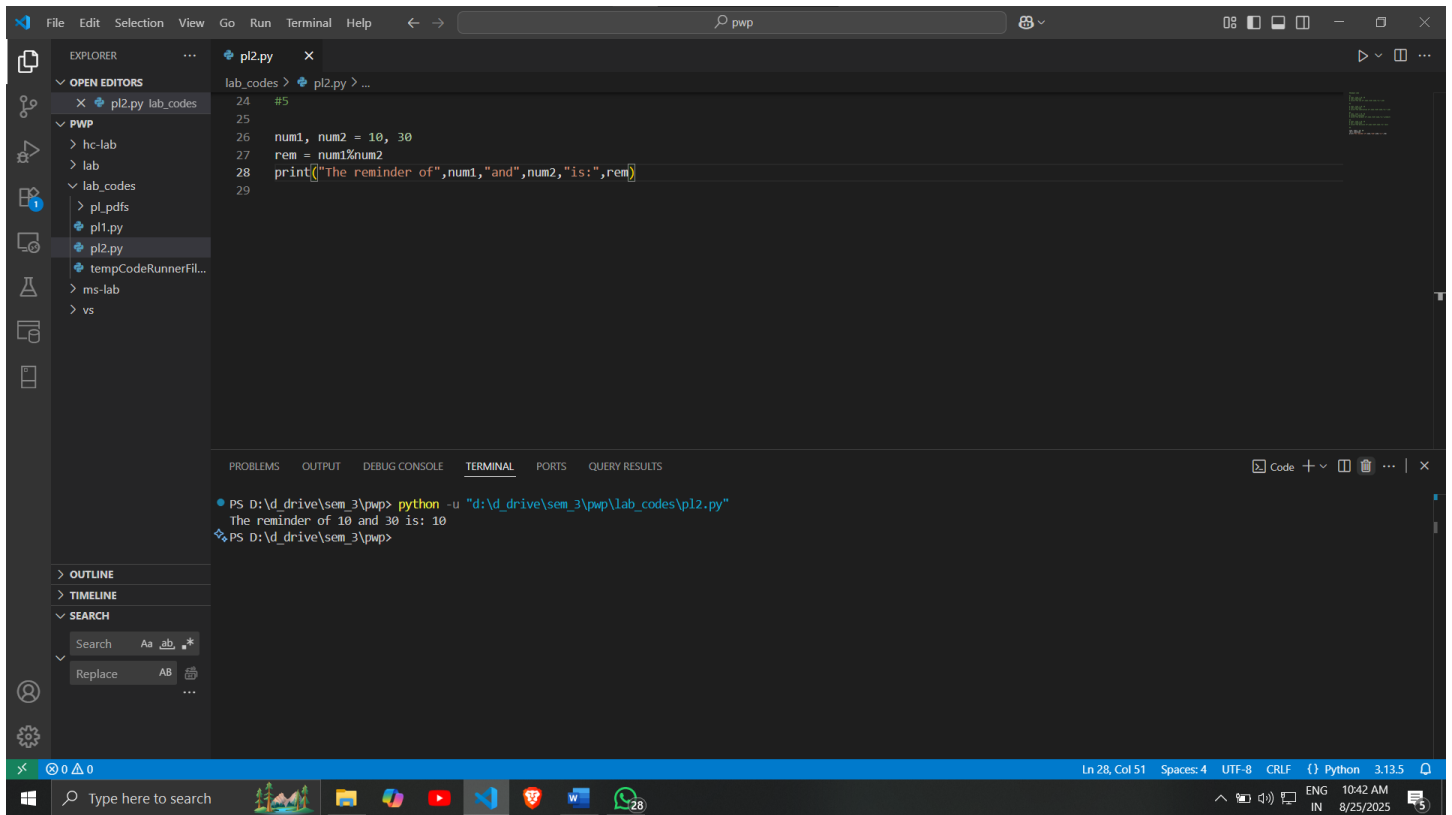
num1, num2 = 10, 30

rem = num1%num2

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

```

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```

24 #5
25
26 num1, num2 = 10, 30
27 rem = num1*num2
28 print("The remainder of",num1,"and",num2,"is:",rem)
29

```

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
The remainder of 10 and 30 is: 10
PS D:\drive\sem_3\pwp>

```

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.

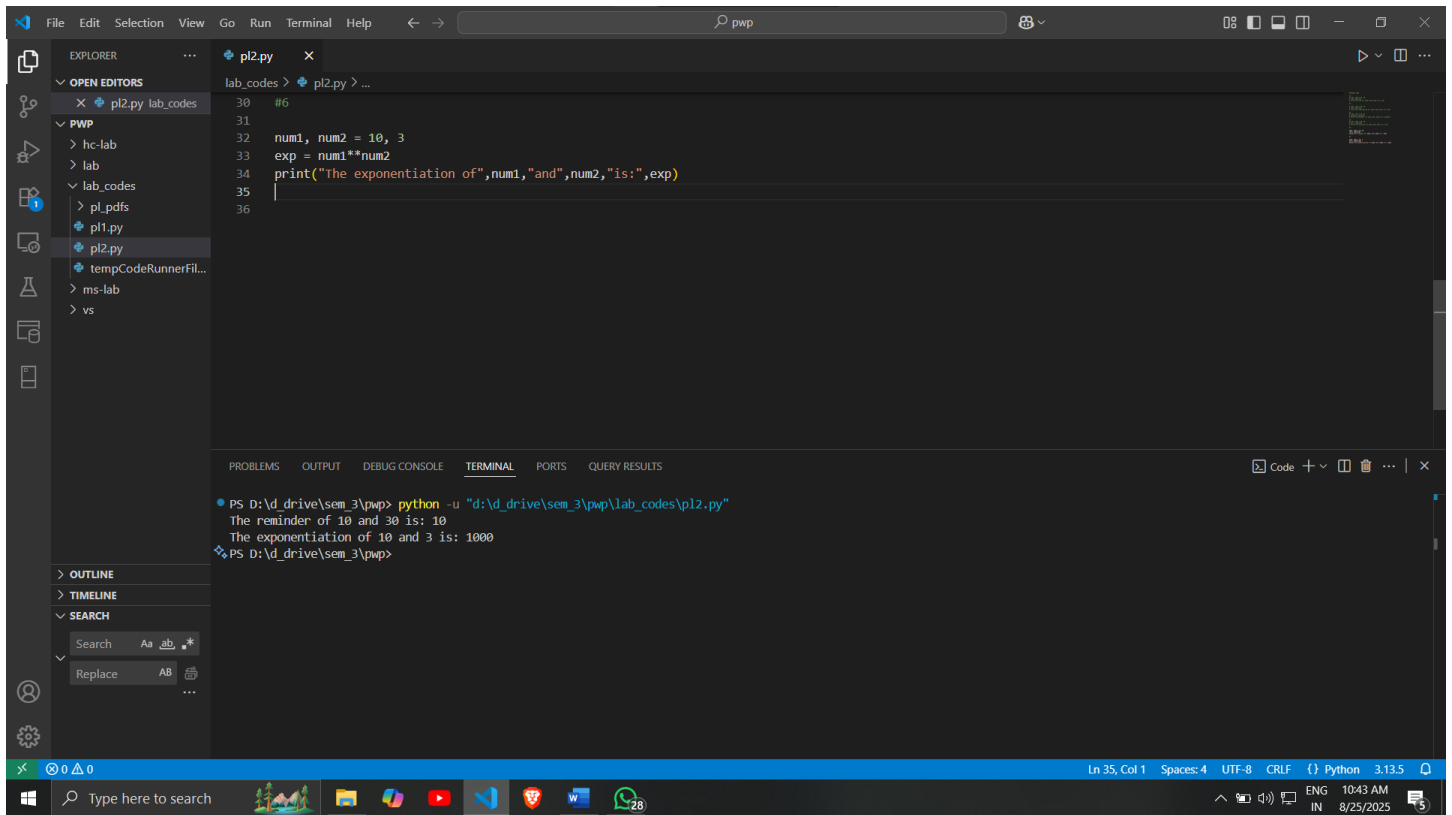
```
num1, num2 = 10, 3
```

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

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

Output:

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```

30 #6
31
32 num1, num2 = 10, 3
33 exp = num1**num2
34 print("The exponentiation of",num1,"and",num2,"is:",exp)
35
36

```

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
The remainder of 10 and 30 is: 10
The exponentiation of 10 and 3 is: 1000
PS D:\drive\sem_3\pwp>

```

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

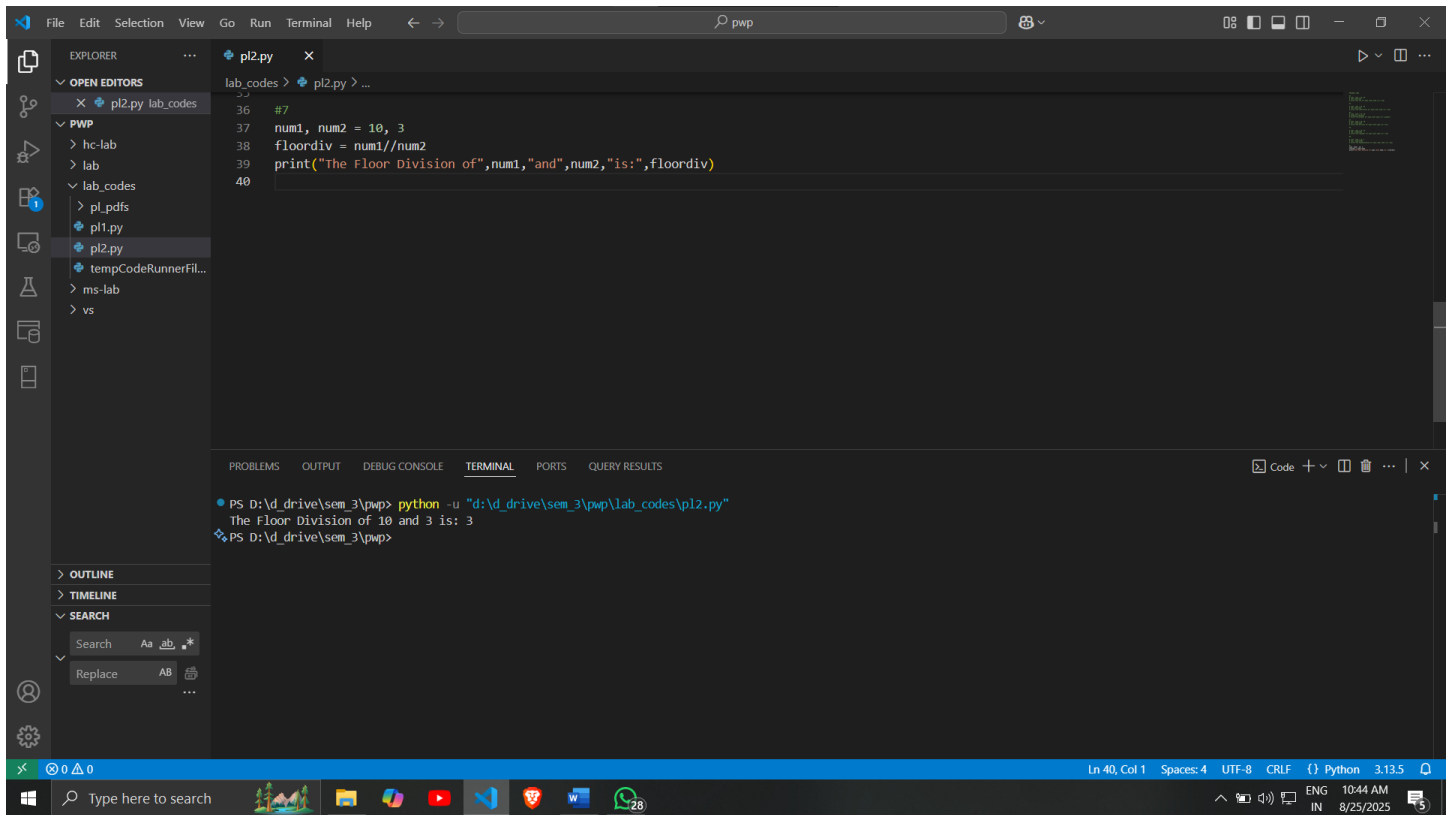
floordiv = num1//num2

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

```

Output:

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```

36 #7
37 num1, num2 = 10, 3
38 floordiv = num1//num2
39 print("The Floor Division of",num1,"and",num2,"is:",floordiv)
40

```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS QUERY RESULTS

```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
The Floor Division of 10 and 3 is: 3
PS D:\d_drive\sem_3\pwp>

```

Ln 40, Col 1 Spaces: 4 UTF-8 CRLF Python 3.13.5

Task:



x = 8

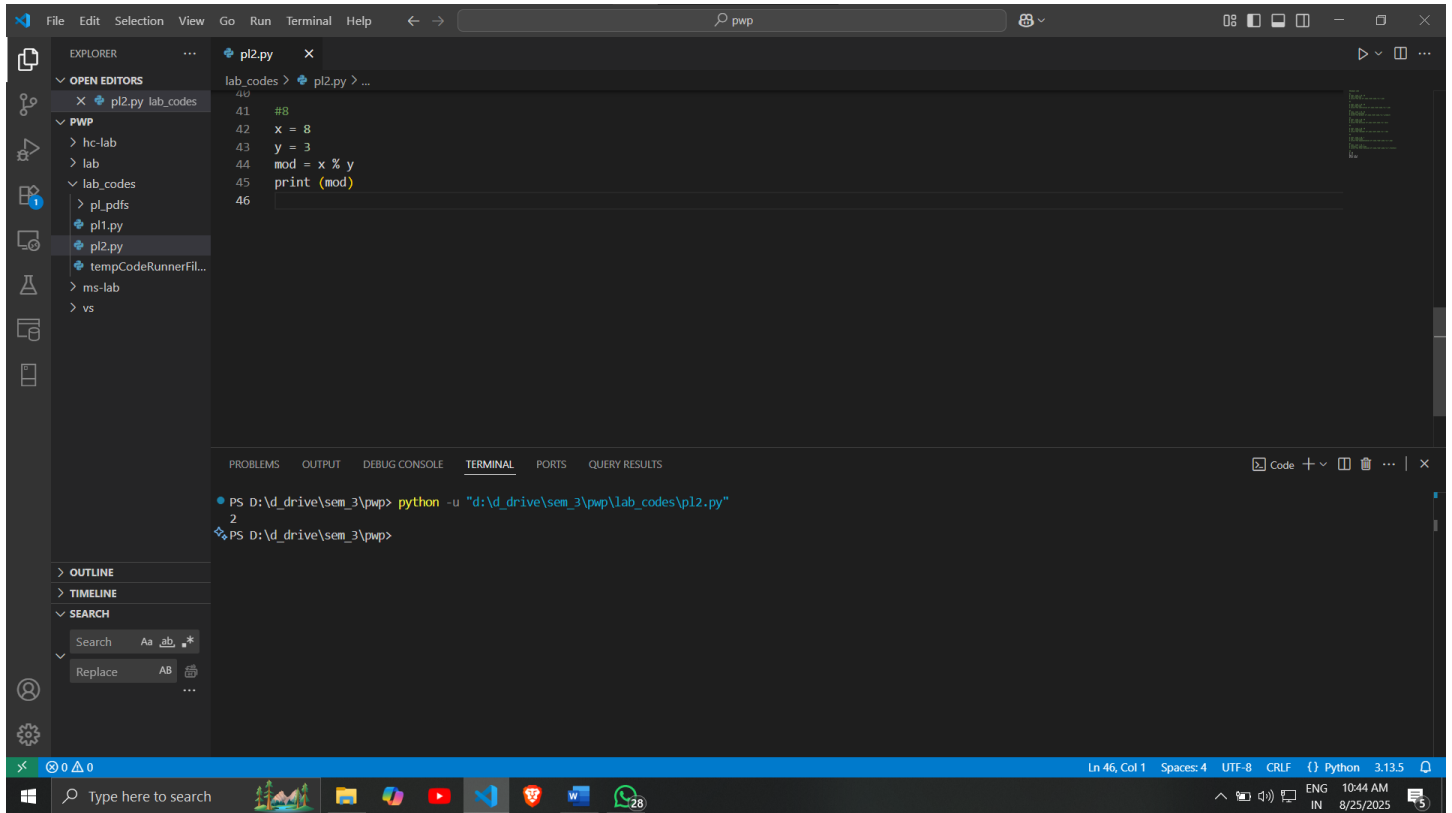
y = 3

mod = x % y

print (mod)

Output:

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The screenshot shows the Visual Studio Code interface. The Explorer panel on the left shows a project structure with folders like 'lab_codes' and files like 'pl1.py' and 'pl2.py'. The main editor window displays the code for 'pl2.py':

```

41 #8
42 x = 8
43 y = 3
44 mod = x % y
45 print (mod)
46

```

The TERMINAL panel at the bottom shows the command prompt execution:

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
2
PS D:\drive\sem_3\pwp>

```

The status bar at the bottom indicates the file is at Line 46, Column 1, using UTF-8 encoding, CRLF line endings, and Python 3.13.5.



a = -5

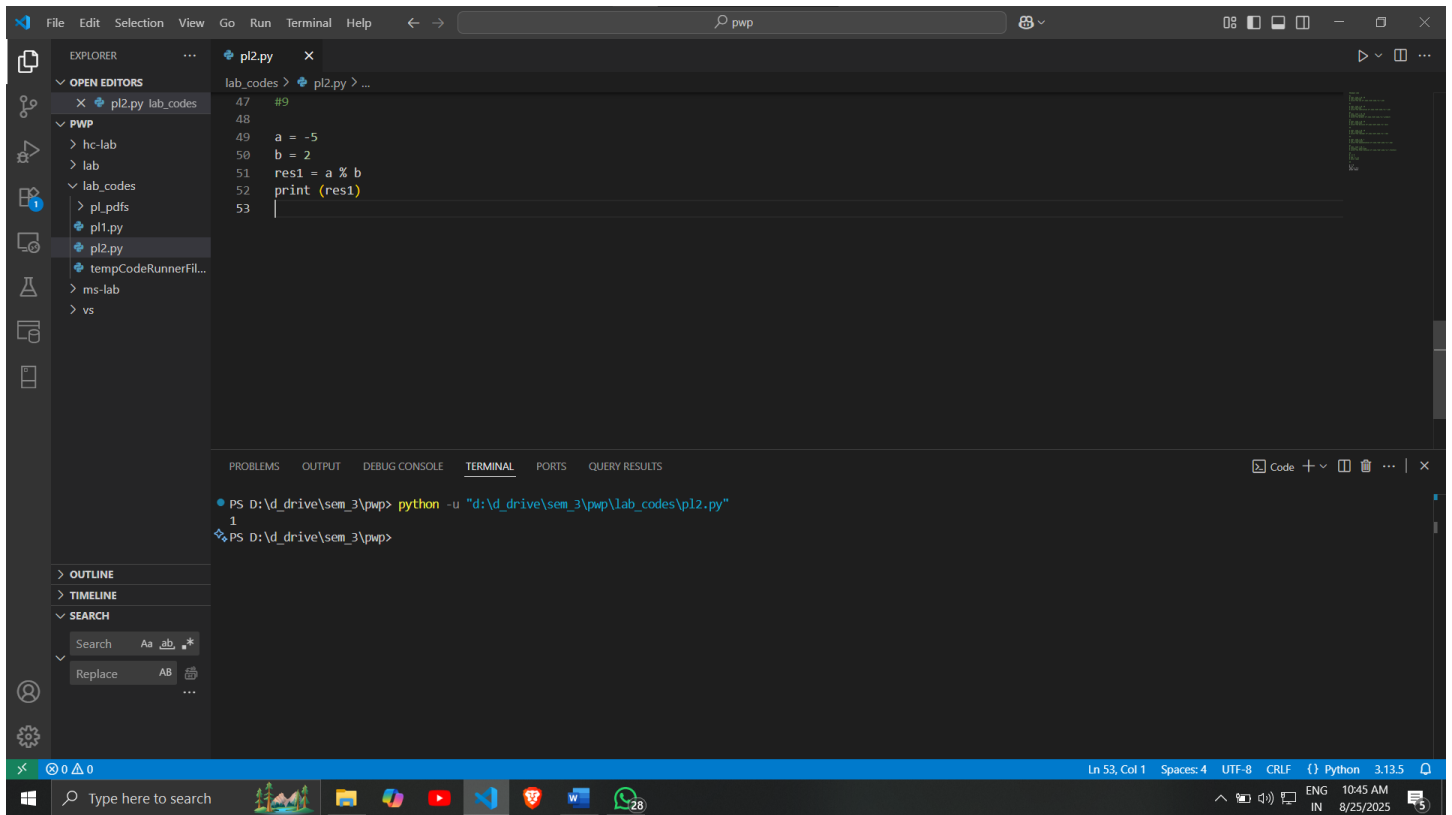
b = 2

res1 = a % b

print (res1)

Output

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The screenshot shows the Visual Studio Code interface. The Explorer panel on the left shows a project structure with folders like 'lab_codes' and files like 'pl1.py' and 'pl2.py'. The main editor window displays the code for 'pl2.py':

```

47 #9
48
49 a = -5
50 b = 2
51 res1 = a % b
52 print (res1)
53

```

The TERMINAL panel at the bottom shows the command prompt output:

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
1
PS D:\drive\sem_3\pwp>

```

The status bar at the bottom indicates the file is at line 53, column 1, using UTF-8 encoding with CRLF line endings, and the Python interpreter is set to 3.13.5.



m = 5

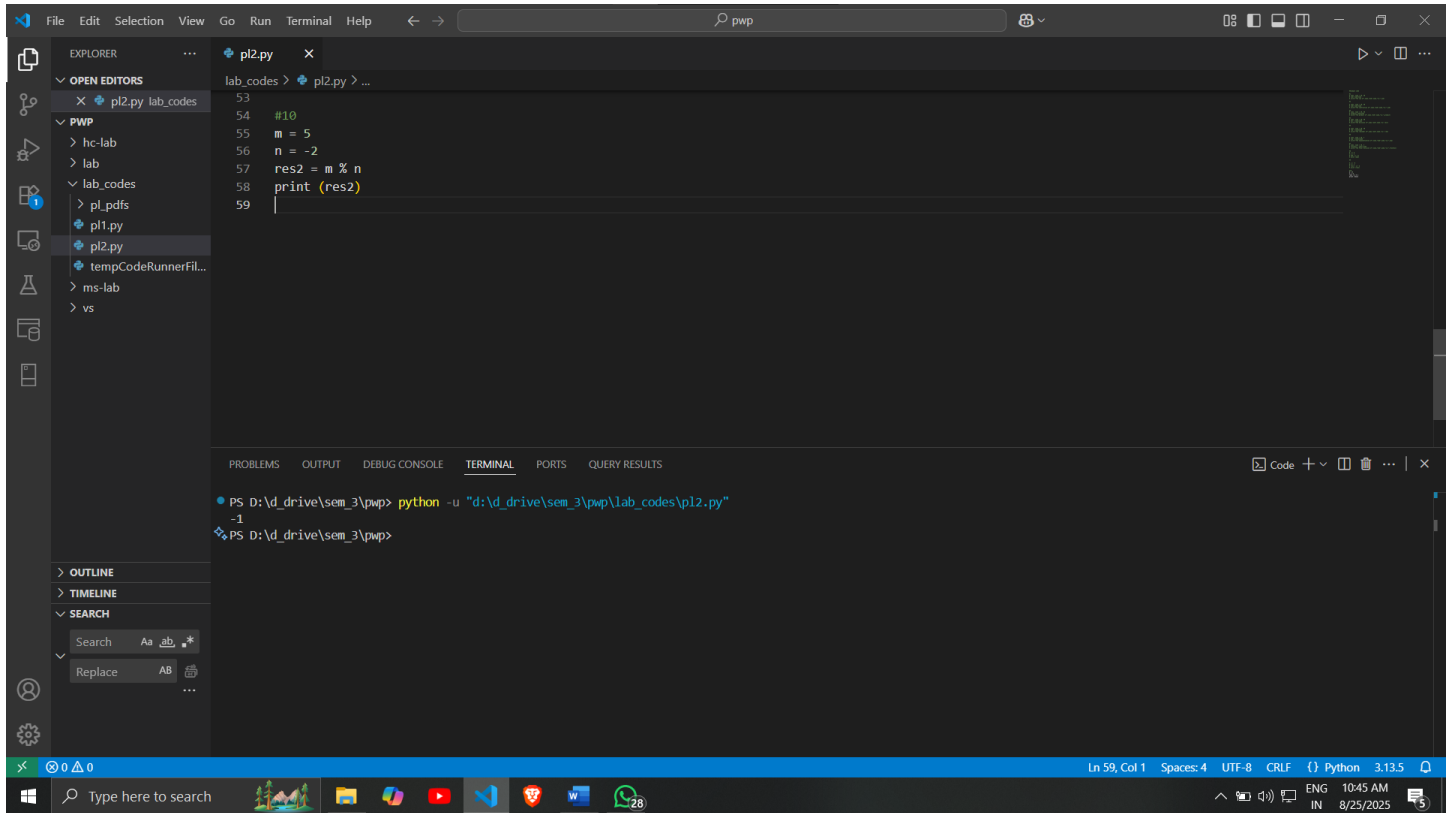
n = -2

res2 = m % n

print (res2)

Output

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The screenshot shows a Visual Studio Code editor with a Python file named `pl2.py` open. The code in the file is as follows:

```

53
54 #10
55 m = 5
56 n = -2
57 res2 = m % n
58 print (res2)
59

```

The terminal at the bottom shows the command to run the script:

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
-1
PS D:\drive\sem_3\pwp>

```

The status bar at the bottom indicates the file is at line 59, column 1, using UTF-8 encoding, CRLF line endings, and Python 3.13.5.



e = -5

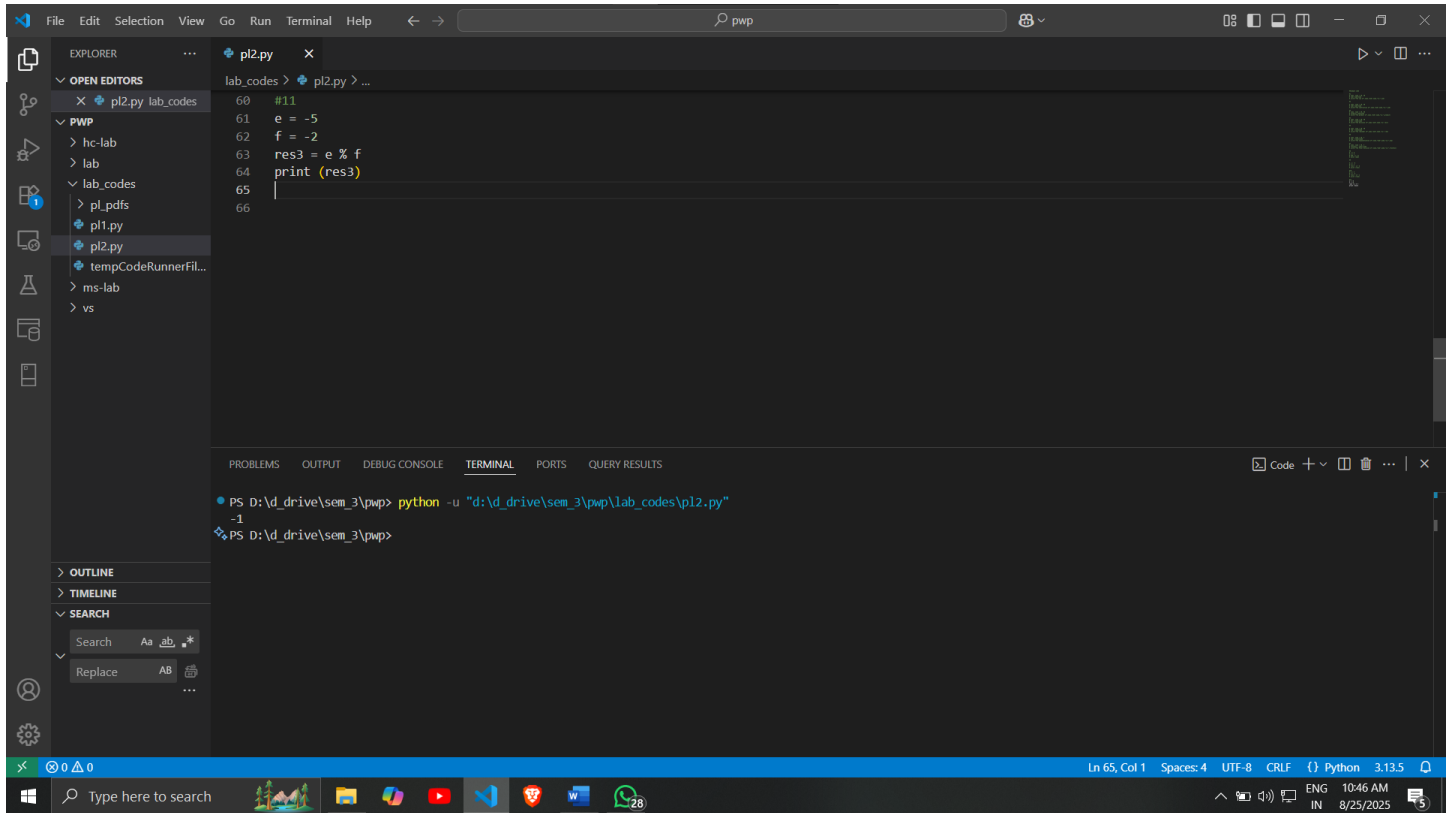
f = -2

res3 = e % f

print (res3)

Output

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The screenshot shows a Visual Studio Code editor with a file explorer on the left. The file explorer shows a project structure with folders like 'lab_codes' and 'pl2.py'. The main editor window displays a Python script named 'pl2.py' with the following code:

```

60 #11
61 e = -5
62 f = -2
63 res3 = e % f
64 print (res3)
65
66

```

The terminal at the bottom shows the command to run the script:

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
-1
PS D:\drive\sem_3\pwp>

```



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:

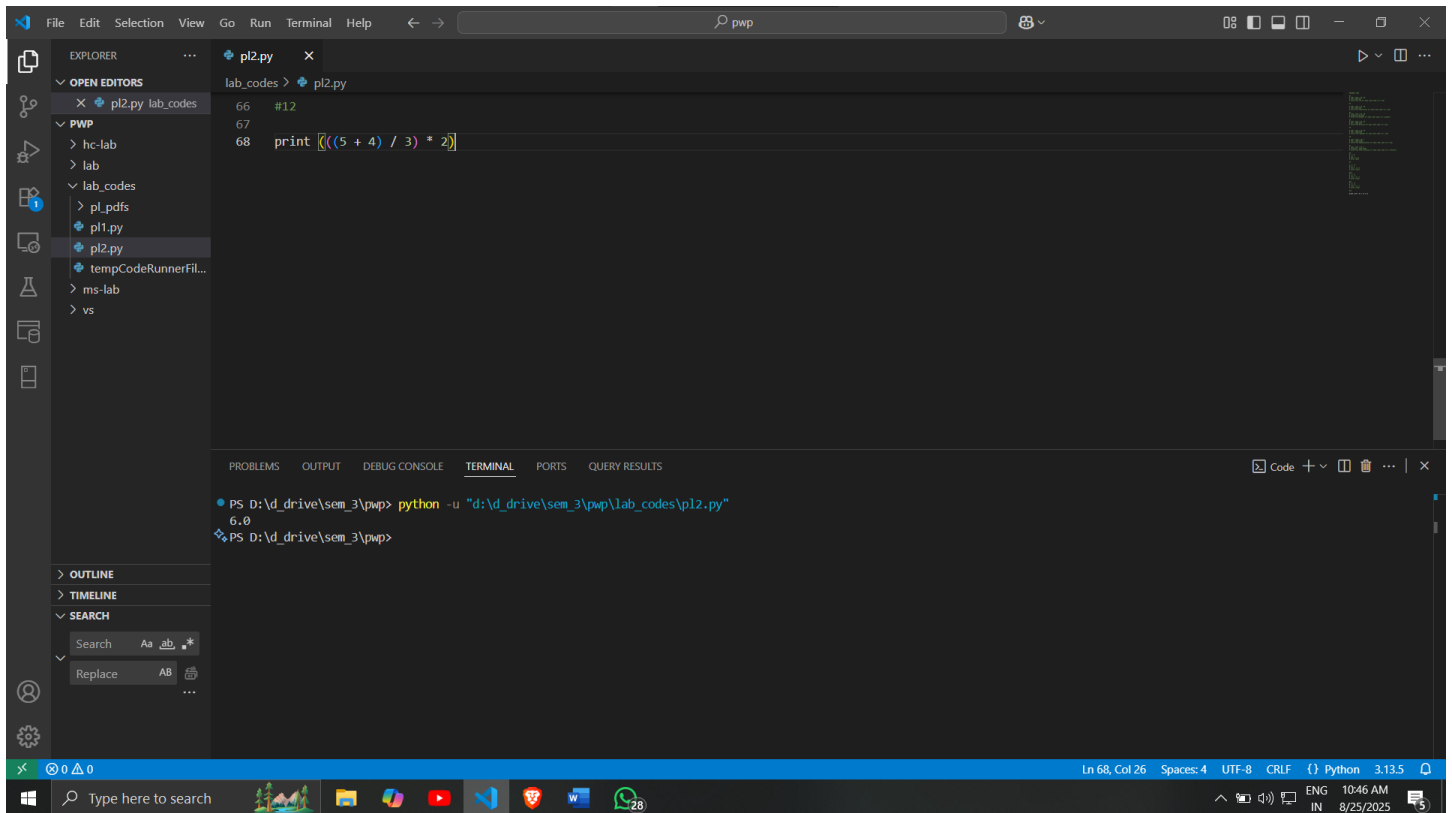
Operator	Purpose
()	Parentheses
**	Exponent
%, *, /, //	Modulos, Multiplication, Division and Floor division
+, -	Addition and Subtraction

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

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

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Output



The screenshot shows a Visual Studio Code editor with a Python file named `pl2.py` open. The file contains the following code:

```

66 #12
67
68 print(((5 + 4) / 3) * 2)

```

The terminal at the bottom shows the command `python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"` being executed, resulting in the output `6.0`.

x = 3



y = 4

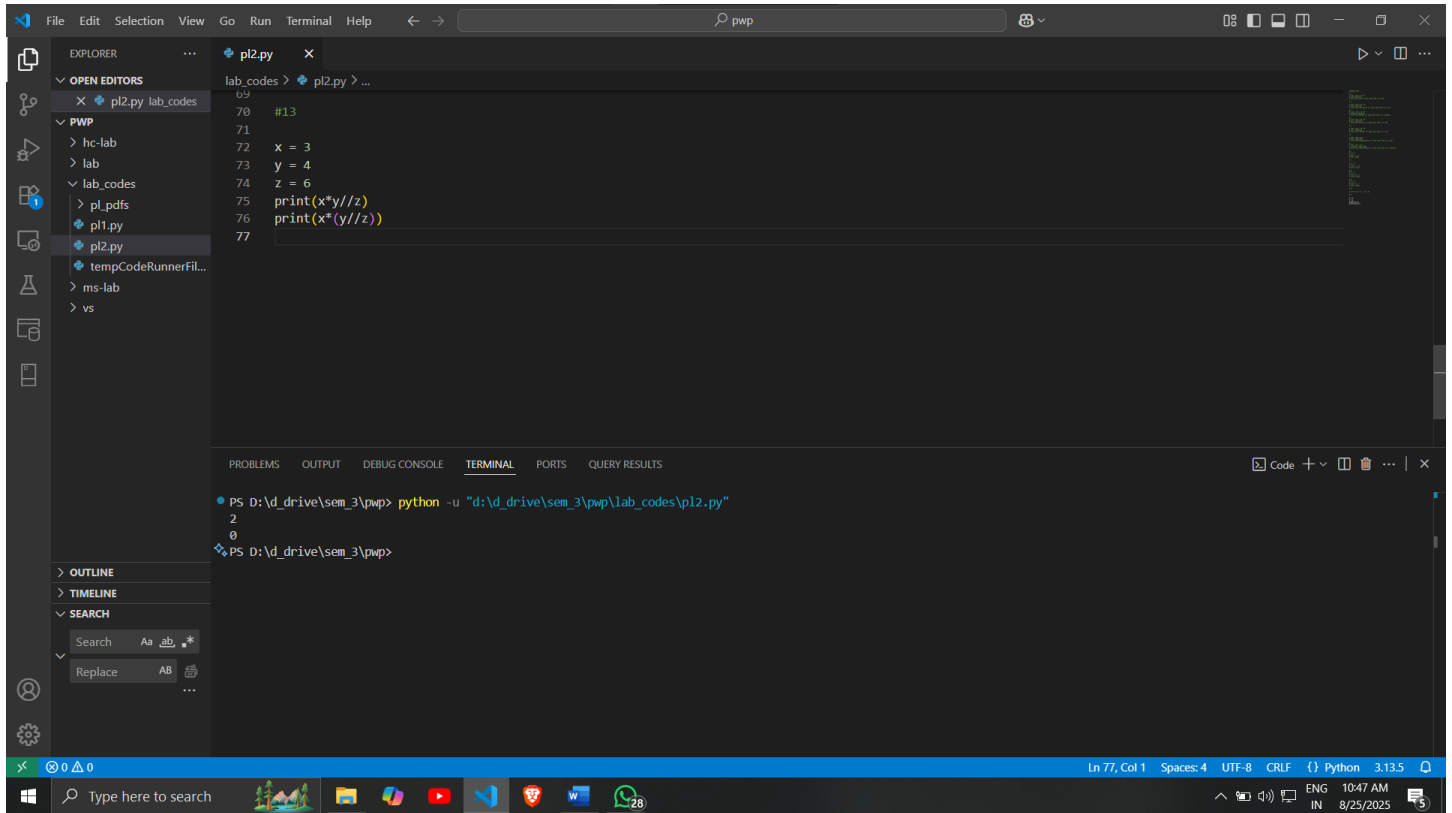
z = 6

print(x*y//z)

print(x*(y//z))

Output:

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The screenshot shows the Visual Studio Code interface. The Explorer panel on the left displays the file structure with 'pl2.py' selected. The main editor window shows the following Python code:

```

69
70 #13
71
72 x = 3
73 y = 4
74 z = 6
75 print(x*y//z)
76 print(x*(y//z))
77

```

The TERMINAL panel at the bottom shows the command prompt output:

```

PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
2
0
PS D:\drive\sem_3\pwp>

```

x = 2

y = 3

z = 2

print(x**y**z)

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

Output

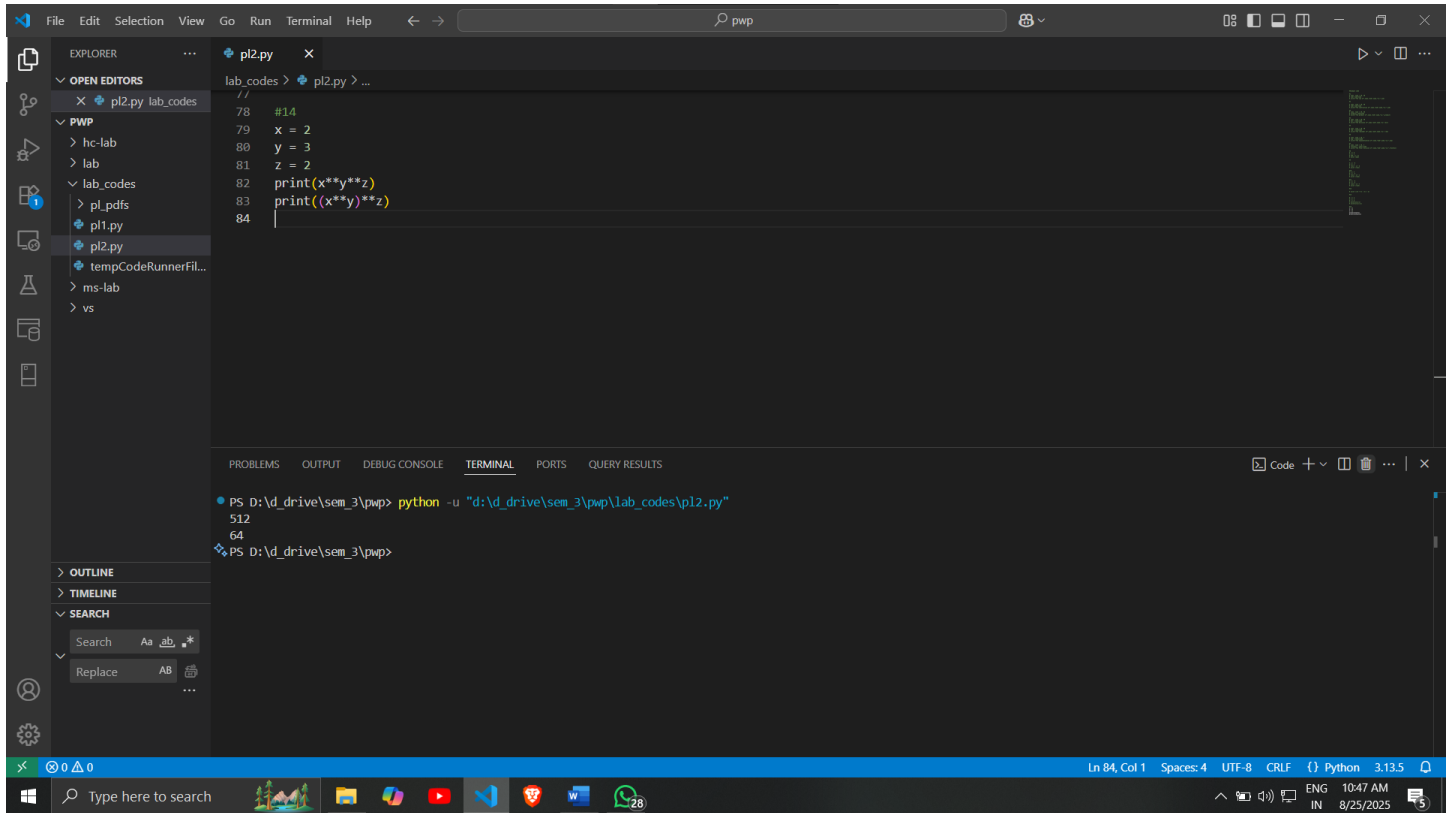
Subject: Programming With Python (01CT1309)

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The screenshot shows the Visual Studio Code interface. The Explorer panel on the left shows the file structure with 'pl2.py' selected. The Editor panel displays the following Python code:

```
//  
78 #14  
79 x = 2  
80 y = 3  
81 z = 2  
82 print(x**y**z)  
83 print((x**y)**z)  
84
```

The TERMINAL panel at the bottom shows the command prompt output:

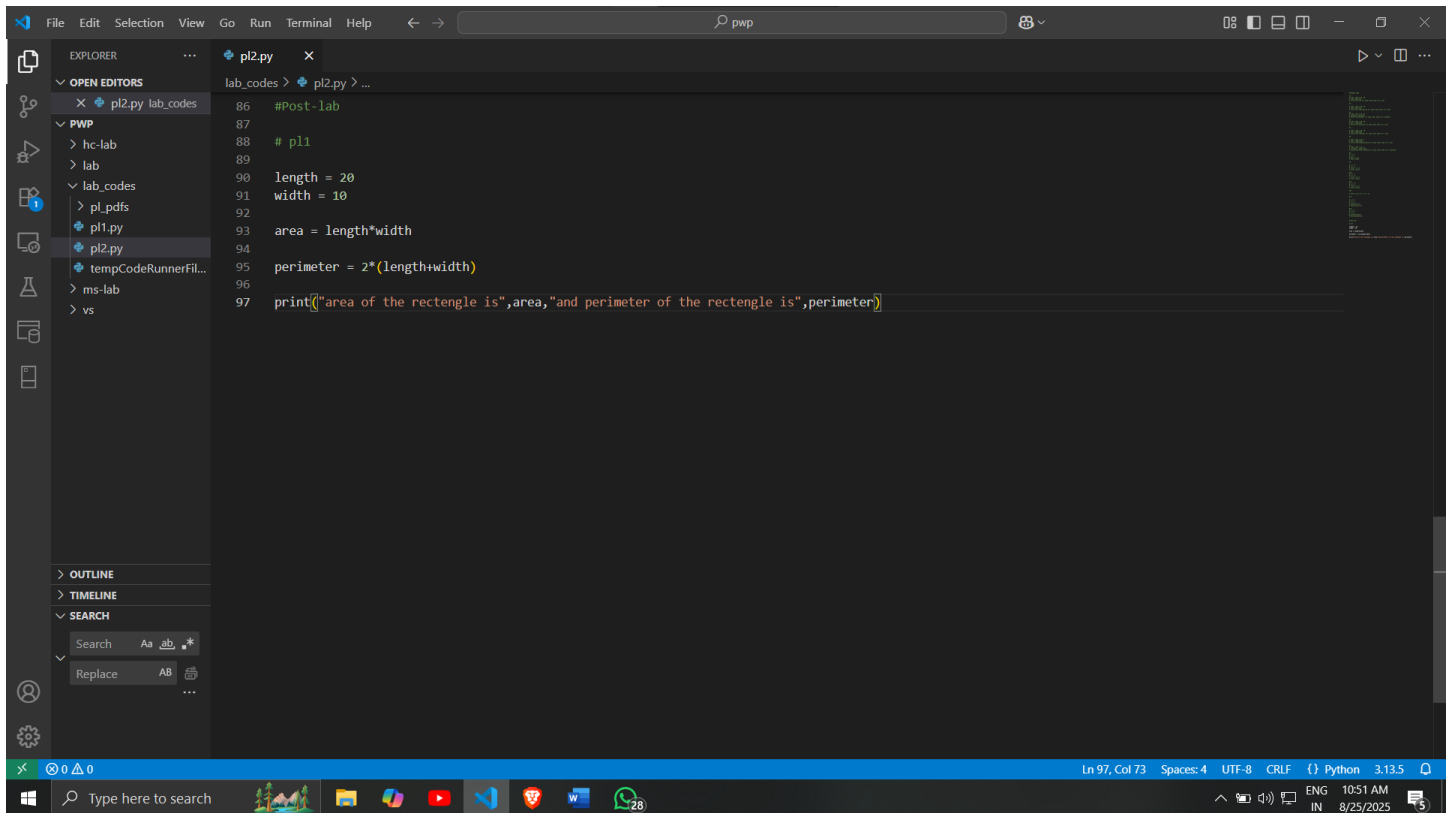
```
PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"  
512  
64  
PS D:\d_drive\sem_3\pwp>
```

The status bar at the bottom indicates the file is at Line 84, Column 1, using UTF-8 encoding, CRLF line endings, and Python 3.13.5.

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Post Lab

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





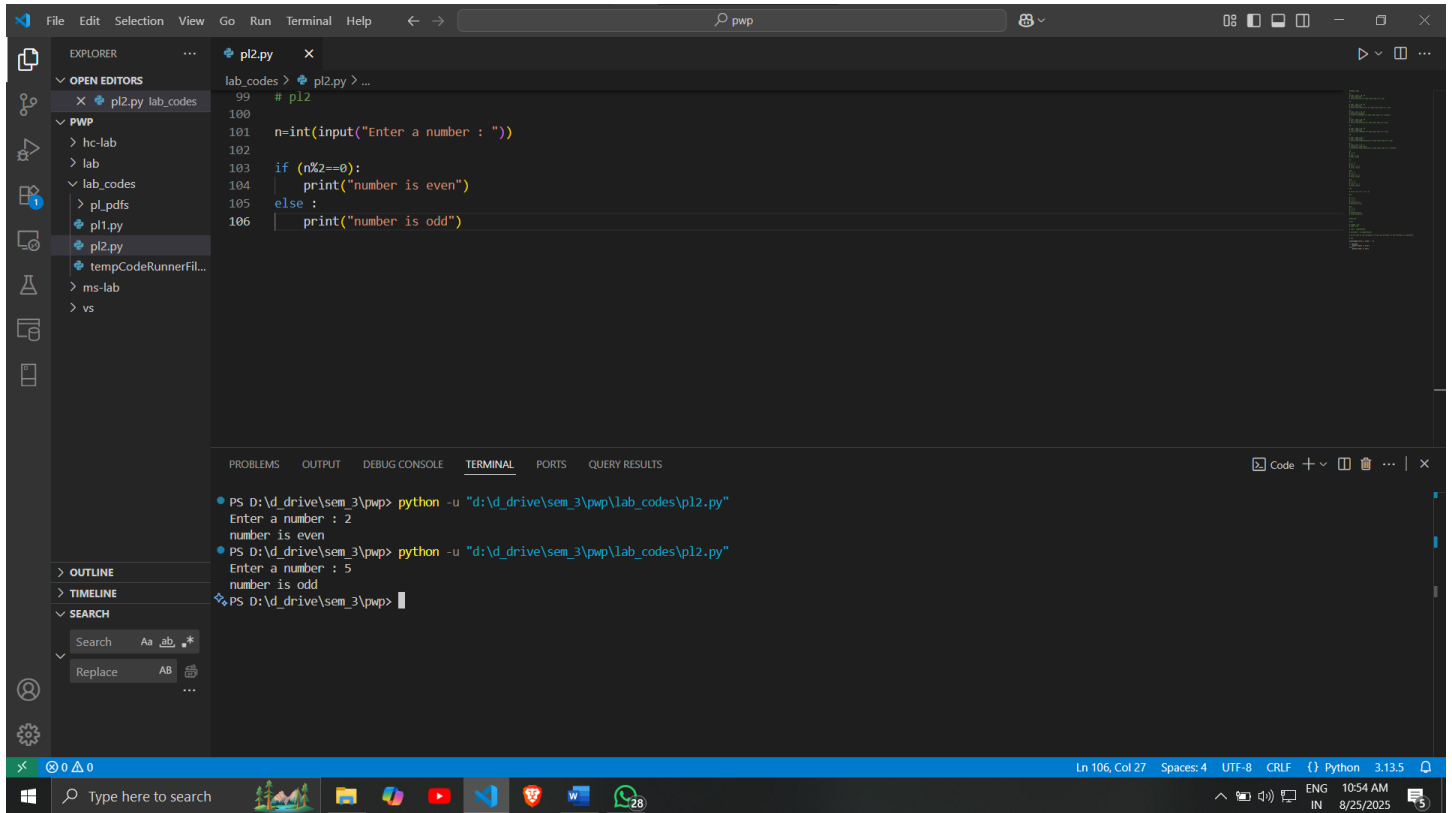
```

86 #Post-lab
87
88 # p11
89
90 length = 20
91 width = 10
92
93 area = length*width
94
95 perimeter = 2*(length+width)
96
97 print("area of the rectengle is",area,"and perimeter of the rectengle is",perimeter)

```

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

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```

lab_codes > pl2.py > ...
99 # pl2
100
101 n=int(input("Enter a number : "))
102
103 if (n%2==0):
104     print("number is even")
105 else :
106     print("number is odd")

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS QUERY RESULTS



```

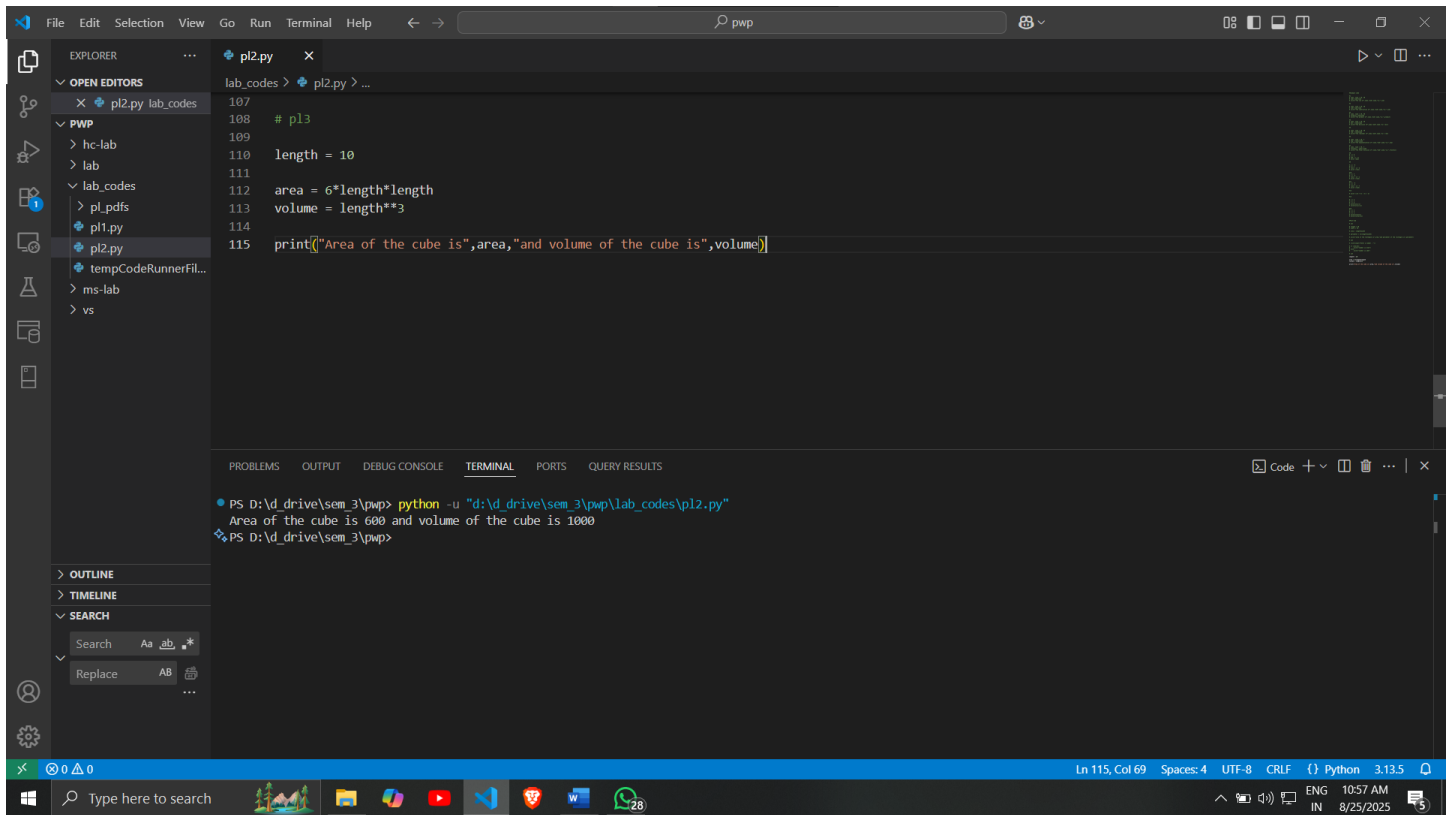
• PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
Enter a number : 2
number is even
• PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
Enter a number : 5
number is odd
• PS D:\d_drive\sem_3\pwp>

```

Ln 106, Col 27 Spaces: 4 UTF-8 CRLF Python 3.13.5

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

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The screenshot shows a Visual Studio Code editor window with a Python file named `pl2.py` open. The code calculates the area and volume of a cube with a side length of 10. The terminal output shows the command `python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"` being executed, resulting in the output: `Area of the cube is 600 and volume of the cube is 1000`.

```

107
108 # pl3
109
110 length = 10
111
112 area = 6*length*length
113 volume = length**3
114
115 print("Area of the cube is",area,"and volume of the cube is",volume)

```



Terminal Output:

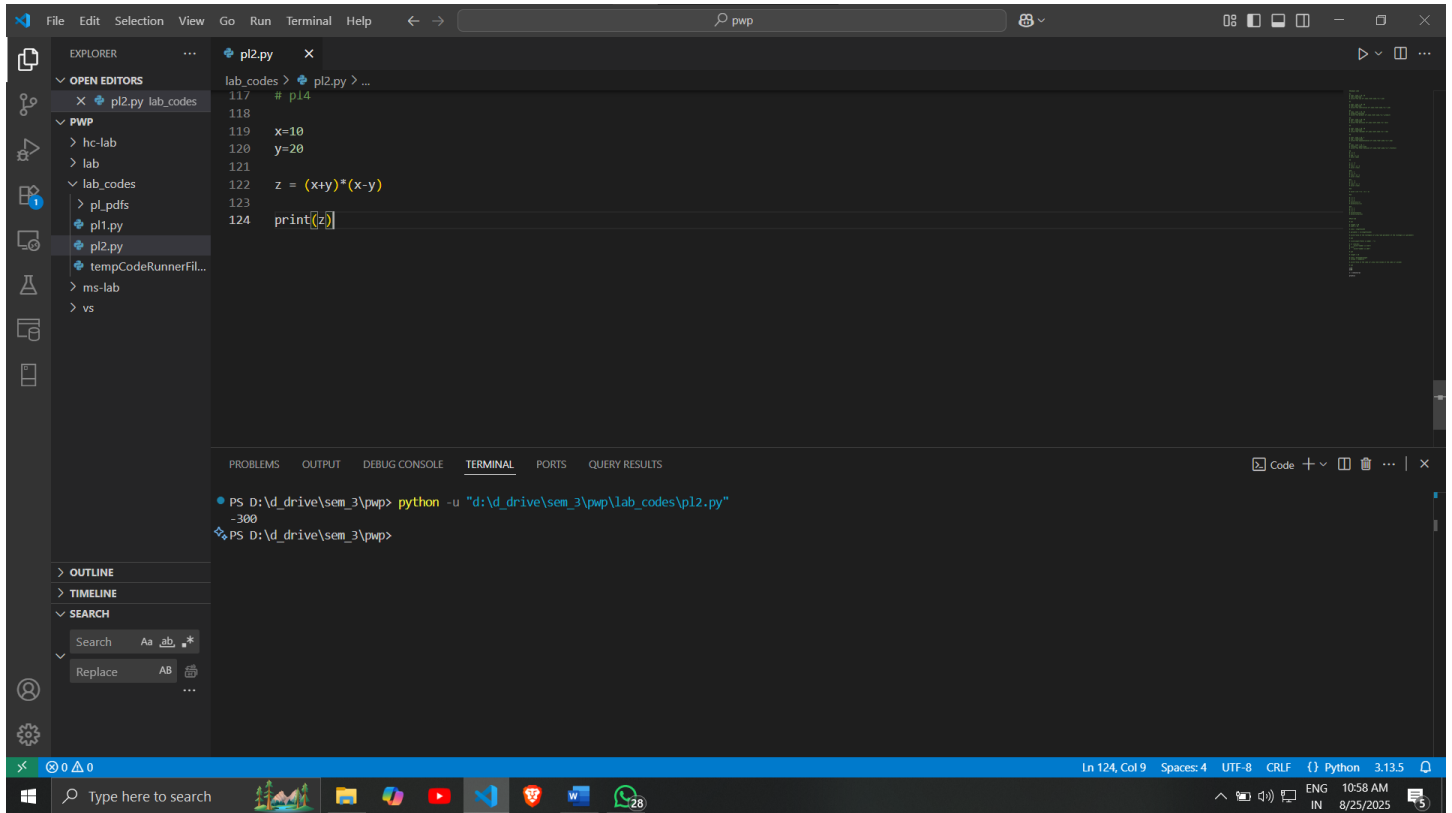
```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
Area of the cube is 600 and volume of the cube is 1000
PS D:\d_drive\sem_3\pwp>

```

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

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```

lab_codes > pl2.py > ...
117 # pl4
118
119 x=10
120 y=20
121
122 z = (x+y)*(x-y)
123
124 print(z)



```

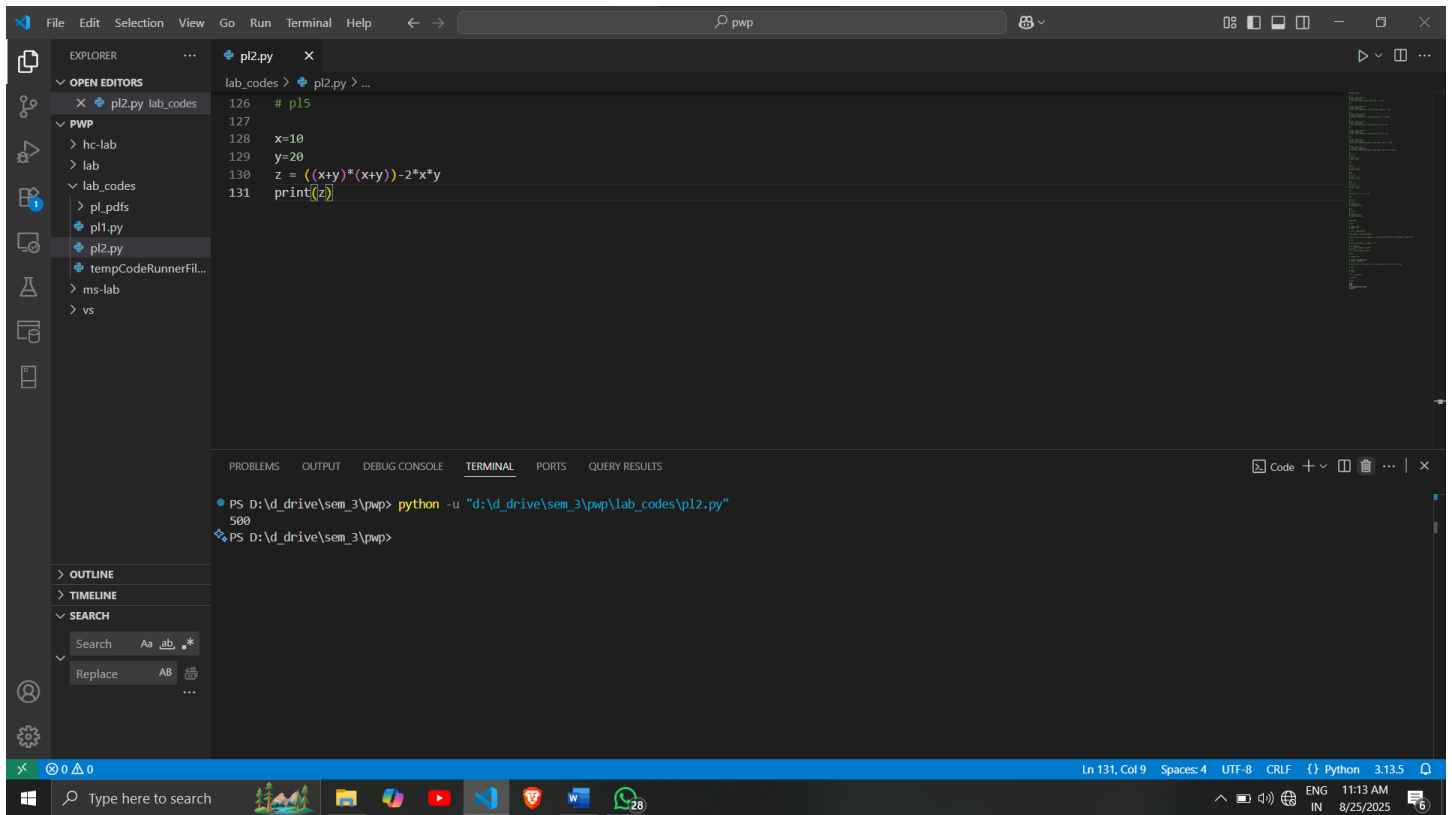
```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
-300
PS D:\d_drive\sem_3\pwp>

```

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

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The screenshot shows a Visual Studio Code editor window with a Python file named `pl2.py` open. The code in the file is as follows:

```

126 # pl5
127
128 x=10
129 y=20
130 z = ((x+y)*(x+y))-2*x*y
131 print(z)

```

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



```

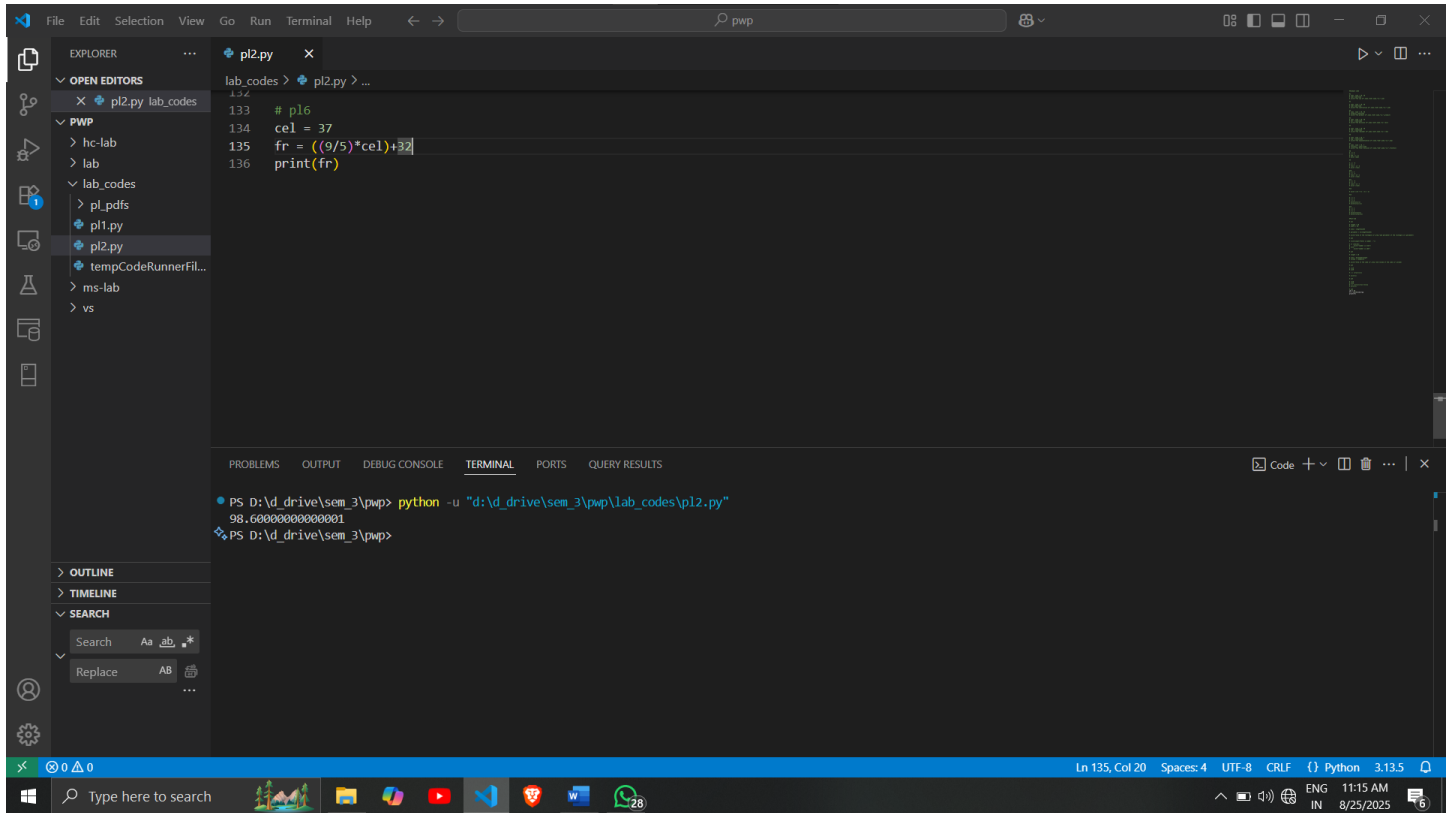
PS D:\drive\sem_3\pwp> python -u "d:\drive\sem_3\pwp\lab_codes\pl2.py"
500
PS D:\drive\sem_3\pwp>

```

The status bar at the bottom indicates the current line is 131, column 9, with 4 spaces, using UTF-8 encoding, CRLF line endings, and the Python interpreter is set to 3.13.5.

Write a python code for Converting Celsius to Fahrenheit

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Subject: Programming With Python (01CT1309)	Aim: Write a program to perform different arithmetic operations on numbers in python.	
Experiment No: 02	Date:14-7-2025	Enrollment No:92400133108



The screenshot shows the Visual Studio Code interface with a Python file named `pl2.py` open. The code defines a variable `cel` with the value 37 and calculates `fr` as $((9/5) * cel) + 32$. The output in the terminal is `98.60000000000001`.

```

133 # p16
134 cel = 37
135 fr = ((9/5)*cel)+32
136 print(fr)

```

Terminal Output:

```

PS D:\d_drive\sem_3\pwp> python -u "d:\d_drive\sem_3\pwp\lab_codes\pl2.py"
98.60000000000001
PS D:\d_drive\sem_3\pwp>

```