	Marwadi University **Faculty of Engineering & Technology** **Department of Information and Communication Technology**	
Subject: Programming With Python (01CT1309)	**Aim:** Write a python program to define a module and import a specific function in that module to another program	
Experiment No: 08	**Date:25-8-2025**	**Enrollment No:92400133108**

Aim: Write a python program to define a module and import a specific function in that module to another program

IDE:

Python Modules

As our program grows bigger, it may contain many lines of code. Instead of putting everything in a single file, we can use modules to separate codes in separate files as per their functionality. This makes our code organized and easier to maintain.

Module is a file that contains code to perform a specific task. A module may contain variables, functions, classes etc. Let's see an example,

Let us create a module. Type the following and save it as example.py

```
def add(a,b):
    result = a+b
    return result
```

```
import example as addition

a = addition.add(4,5)

print(a)
```

Output

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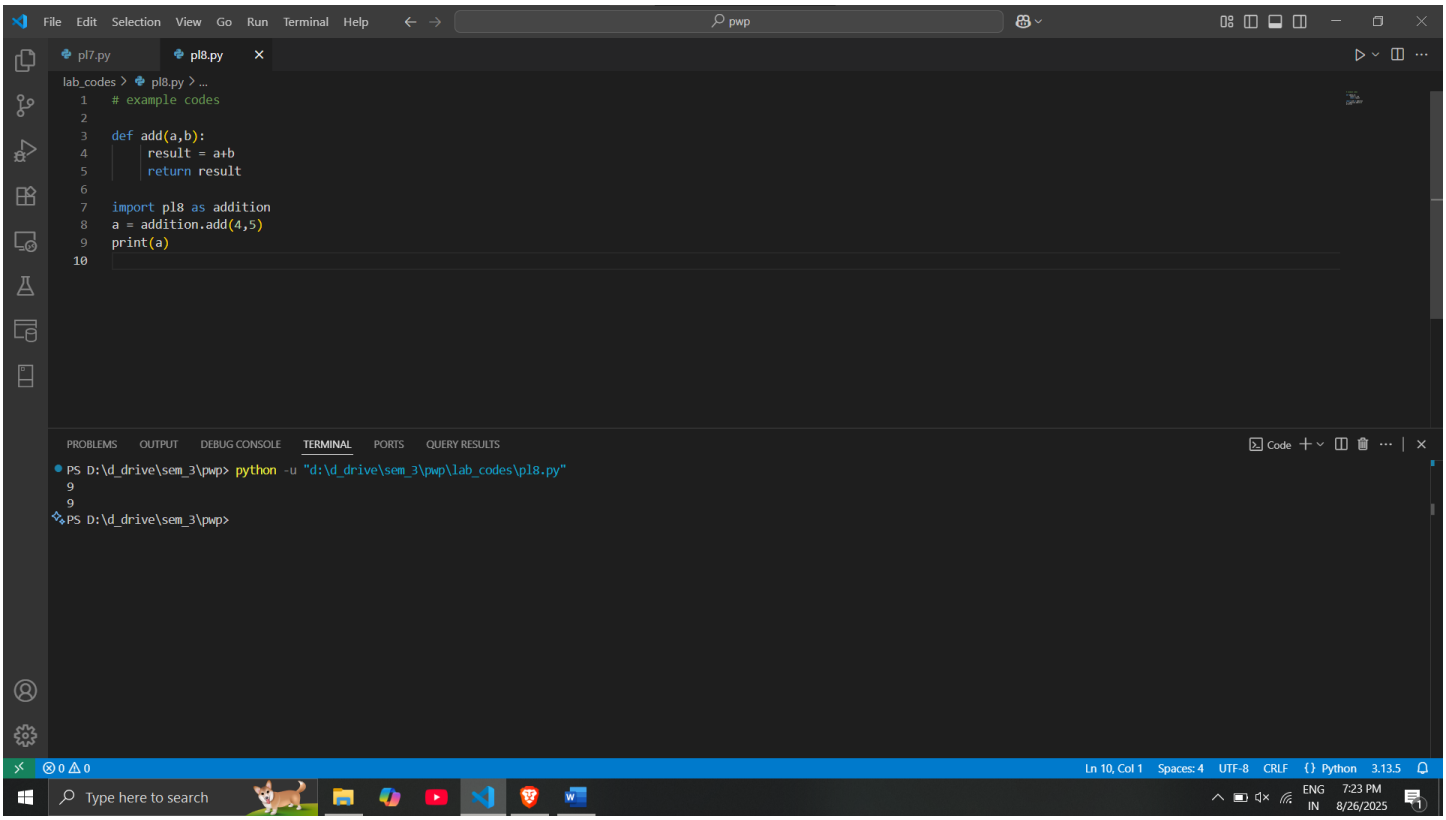

Import Python Standard Library Modules

The Python standard library contains well over 200 modules. We can import a module according to our needs. Suppose we want to get the value of pi, first we import the math module and use math.pi. For example,

#import standard math module

import math

use math.pi to get value of pi

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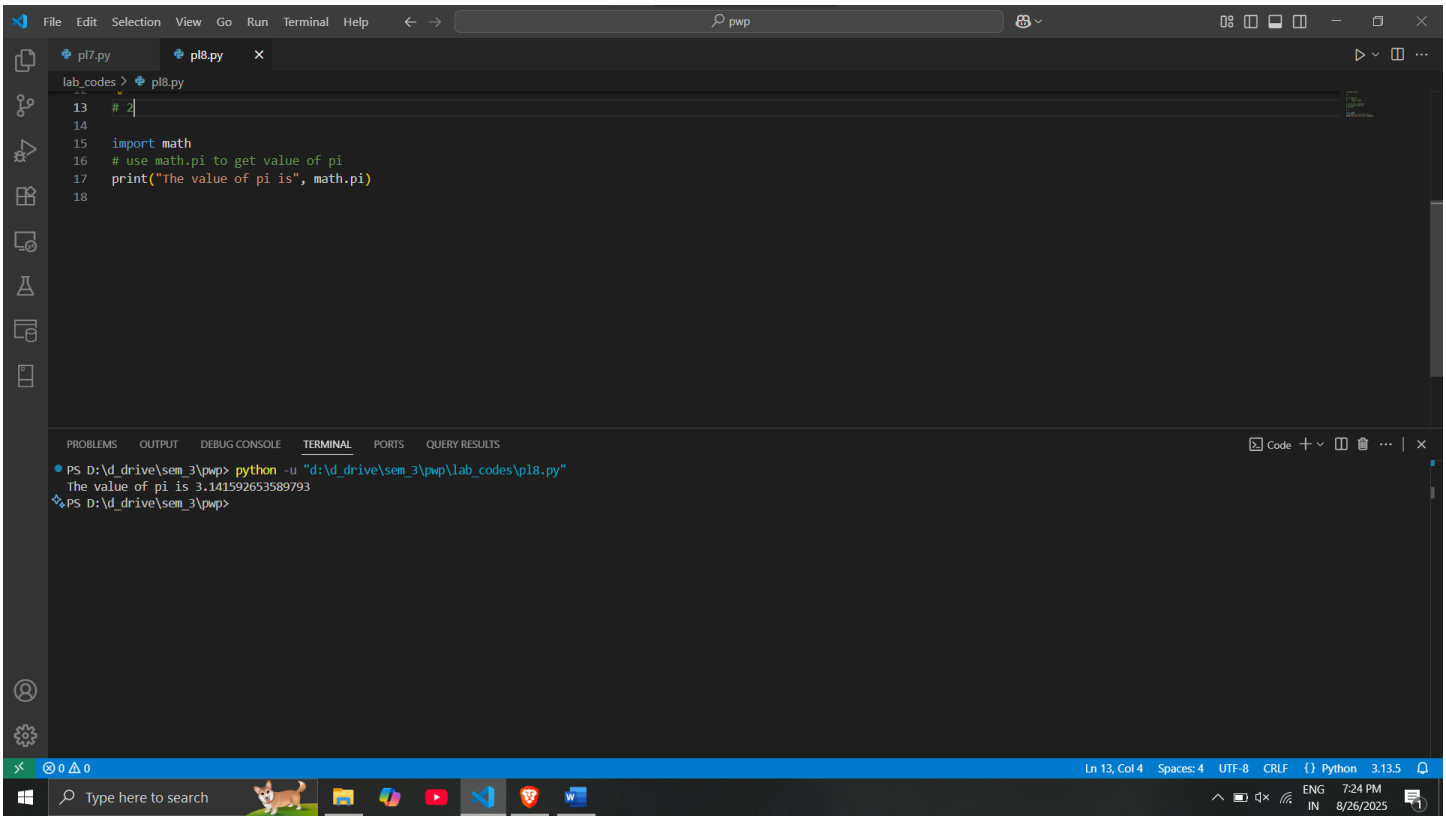
print("The value of pi is", math.pi)

Output



Python import with Renaming

In Python, we can also import a module by renaming it. For example,

import module by renaming it

import math as m

print(m.pi)

Output

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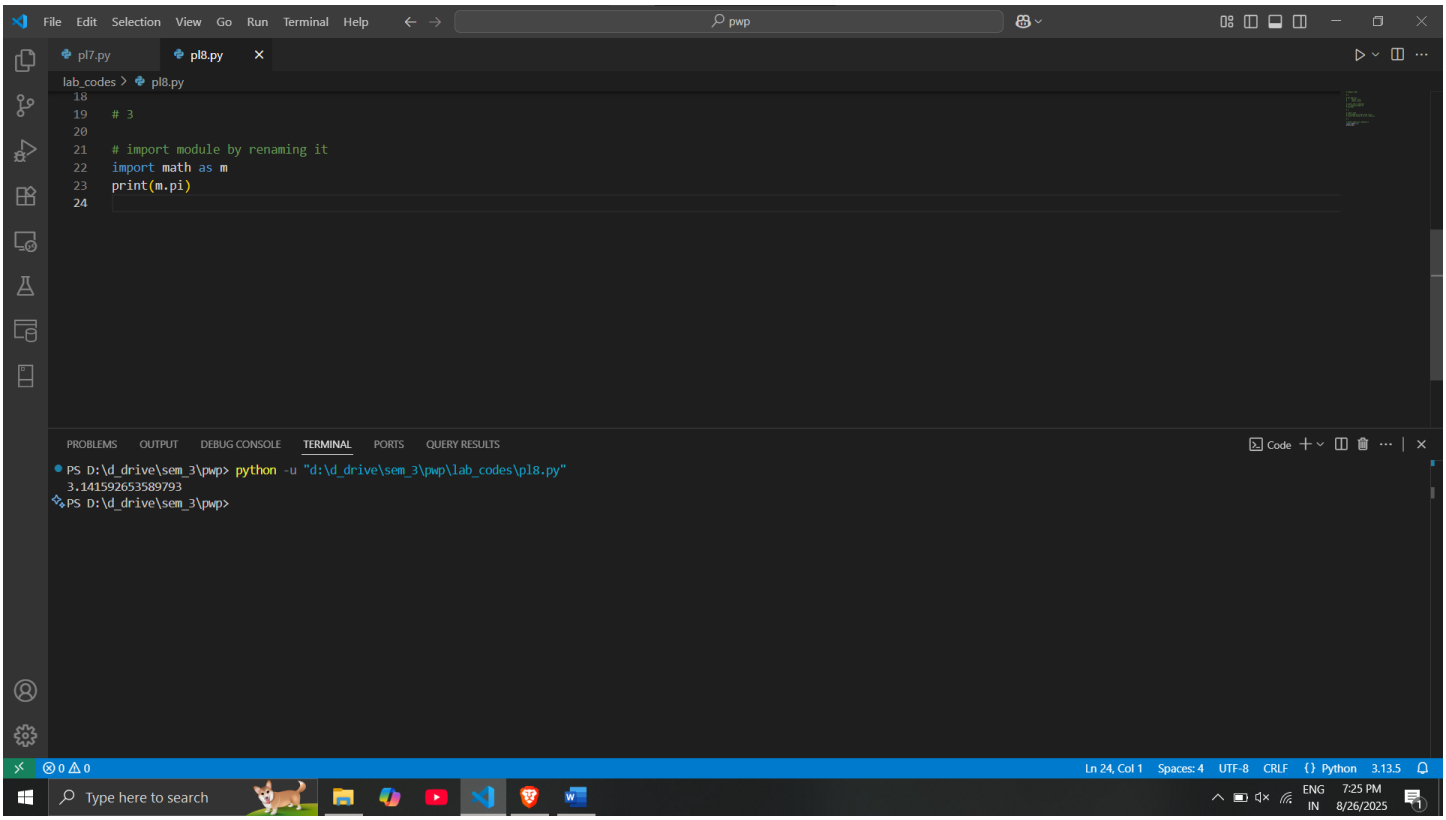

Python from...import statement

We can import specific names from a module without importing the module as a whole. For example,

import only pi from math module

from math import pi

print(pi)

Output

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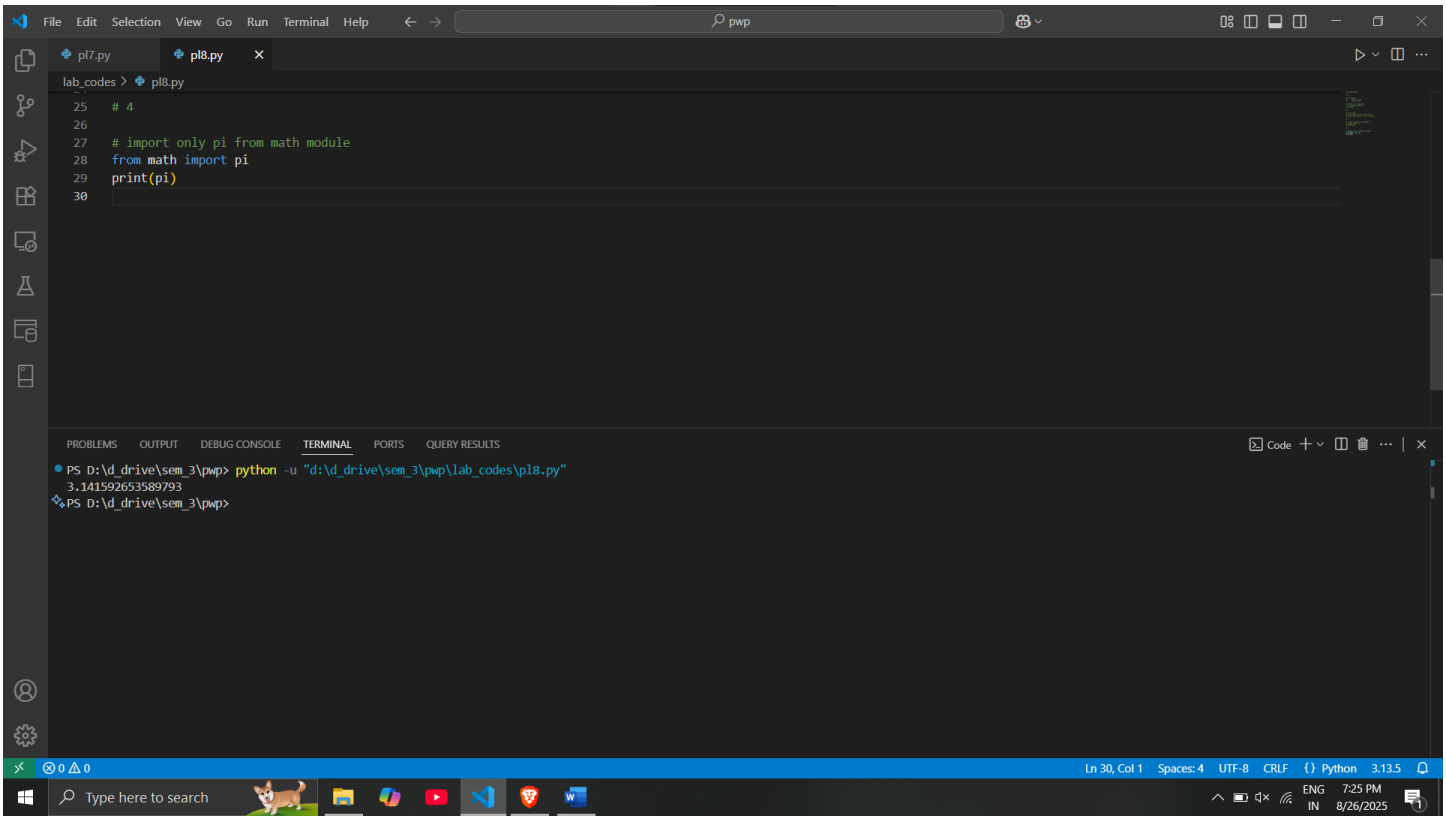

Import all names

In Python, we can import all names(definitions) from a module using the following construct:

```
# import all names from the standard module math

from math import *

print("The value of pi is", pi)
```

Output

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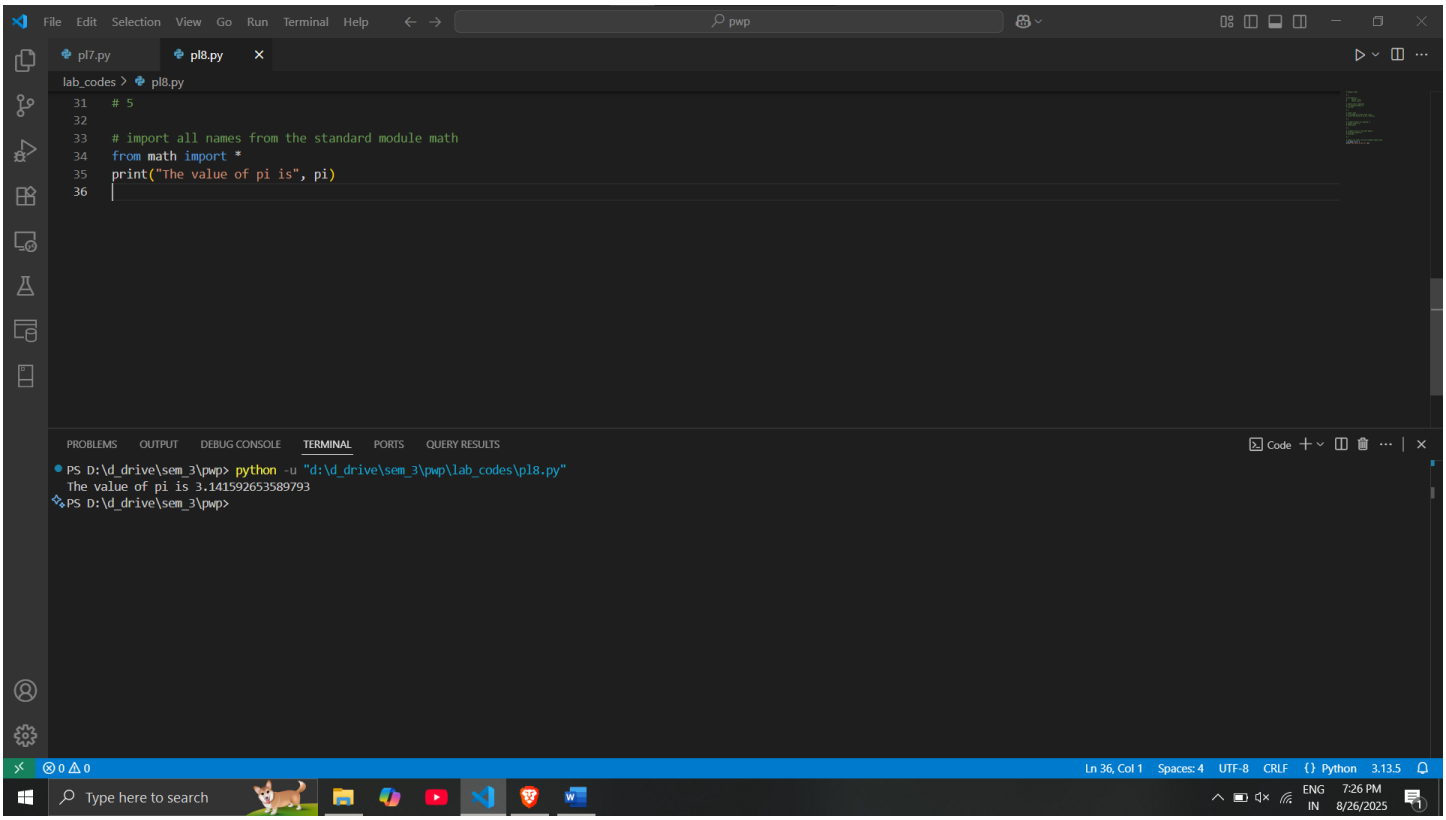

The dir() built-in function

In Python, we can use the dir() function to list all the function names in a module.

We can use dir in math module in the following way:

print(dir(math))

Output

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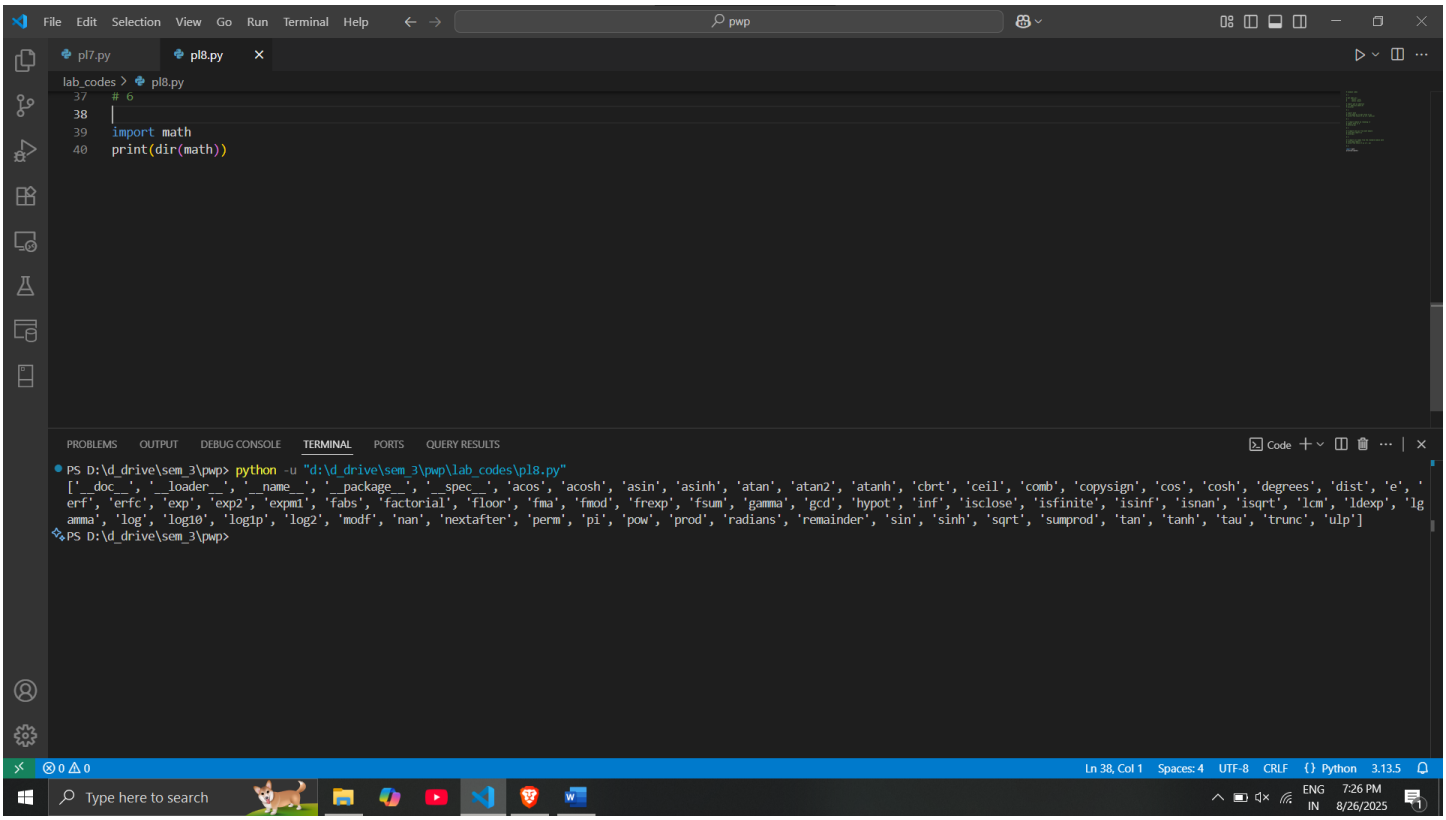

Built-in modules

Some examples of Python built-in modules include “os”, “sys”, “math”, and “datetime”.

help('modules')

Output:

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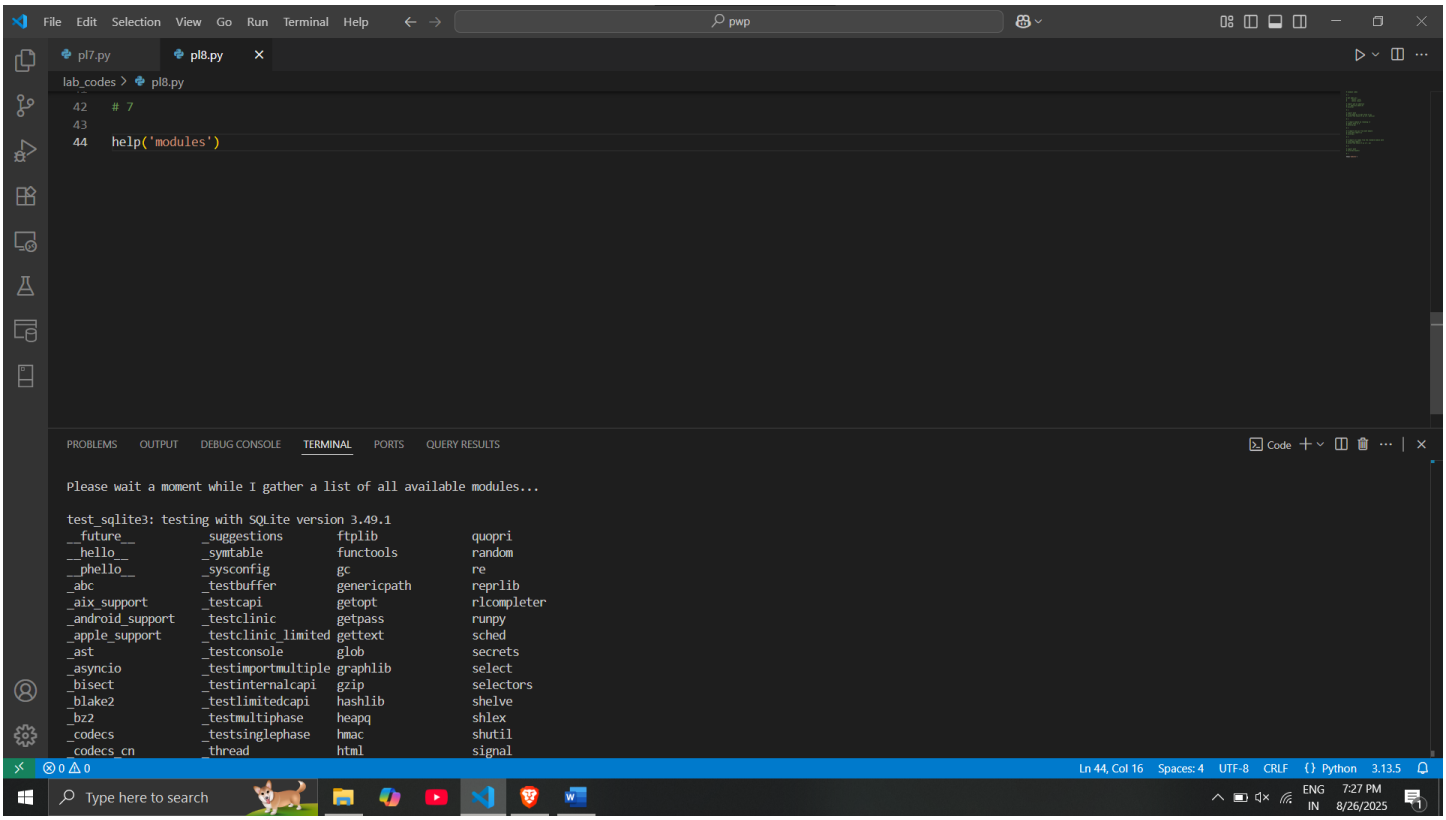

Let’s find the area of the circle

$$a = \pi r^2$$

Python Code

```
import math

r=14

area = math.pi * (r**2)

print(area)
```

Output :

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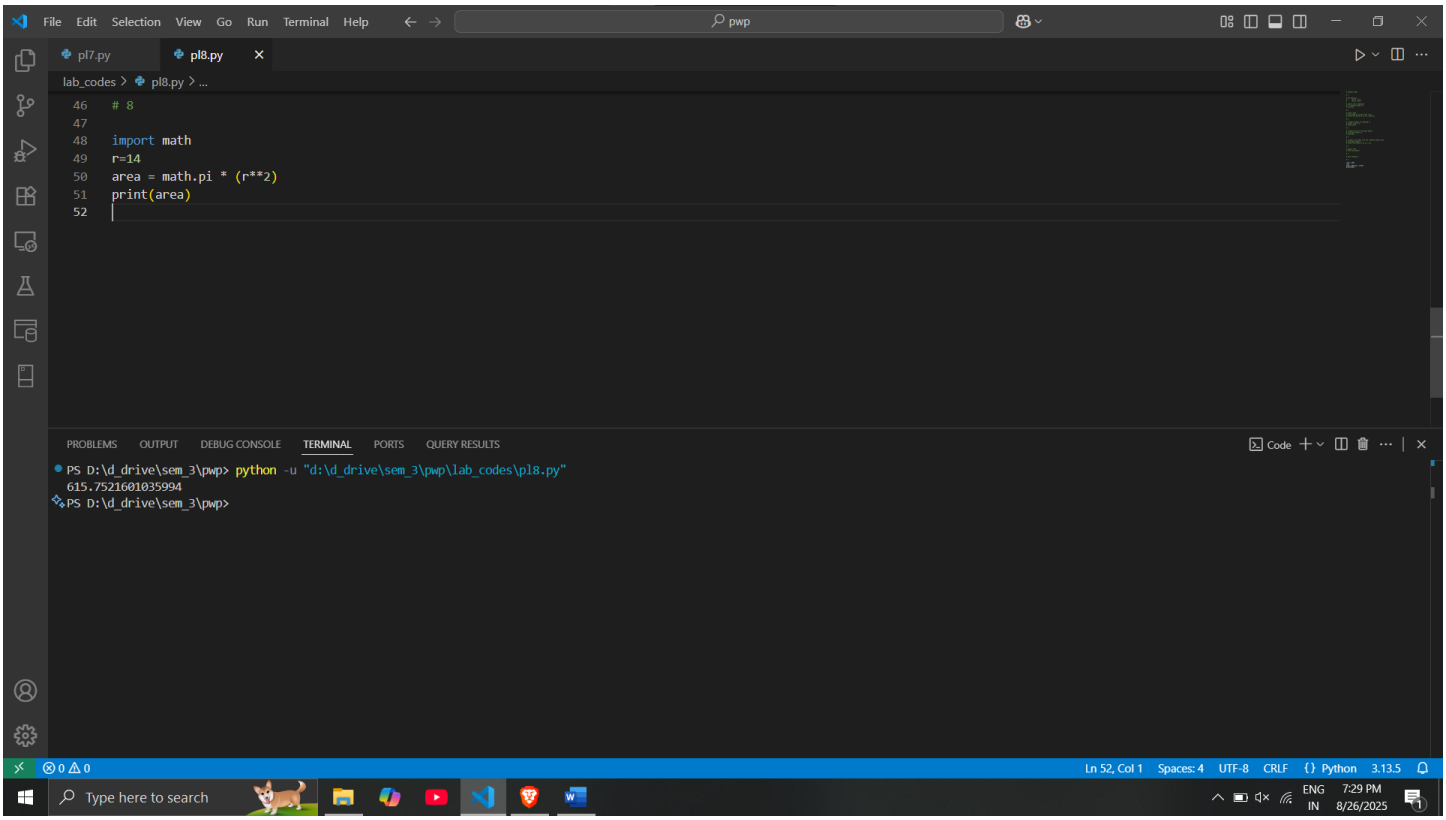

Print the values of positive and negative infinity.

import math

print (math.inf)

print (-math.inf)

Output

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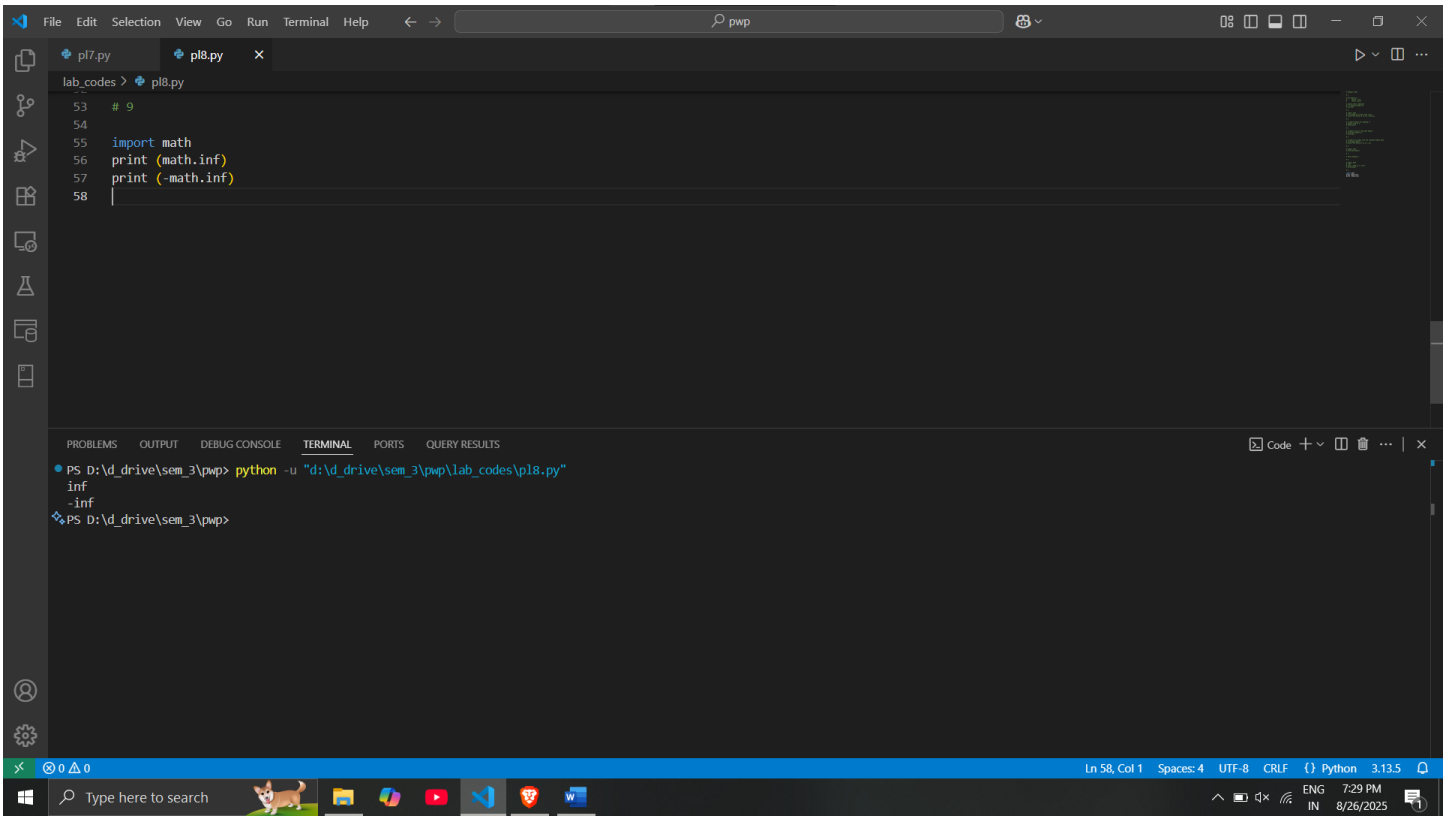

List of Mathematical function in Math Module

pow(x,y), sqrt(x), trunc(x), cos(x), sin(x), tan(x), degrees(x), radians(x), exp(x), log2(x), log10(x)

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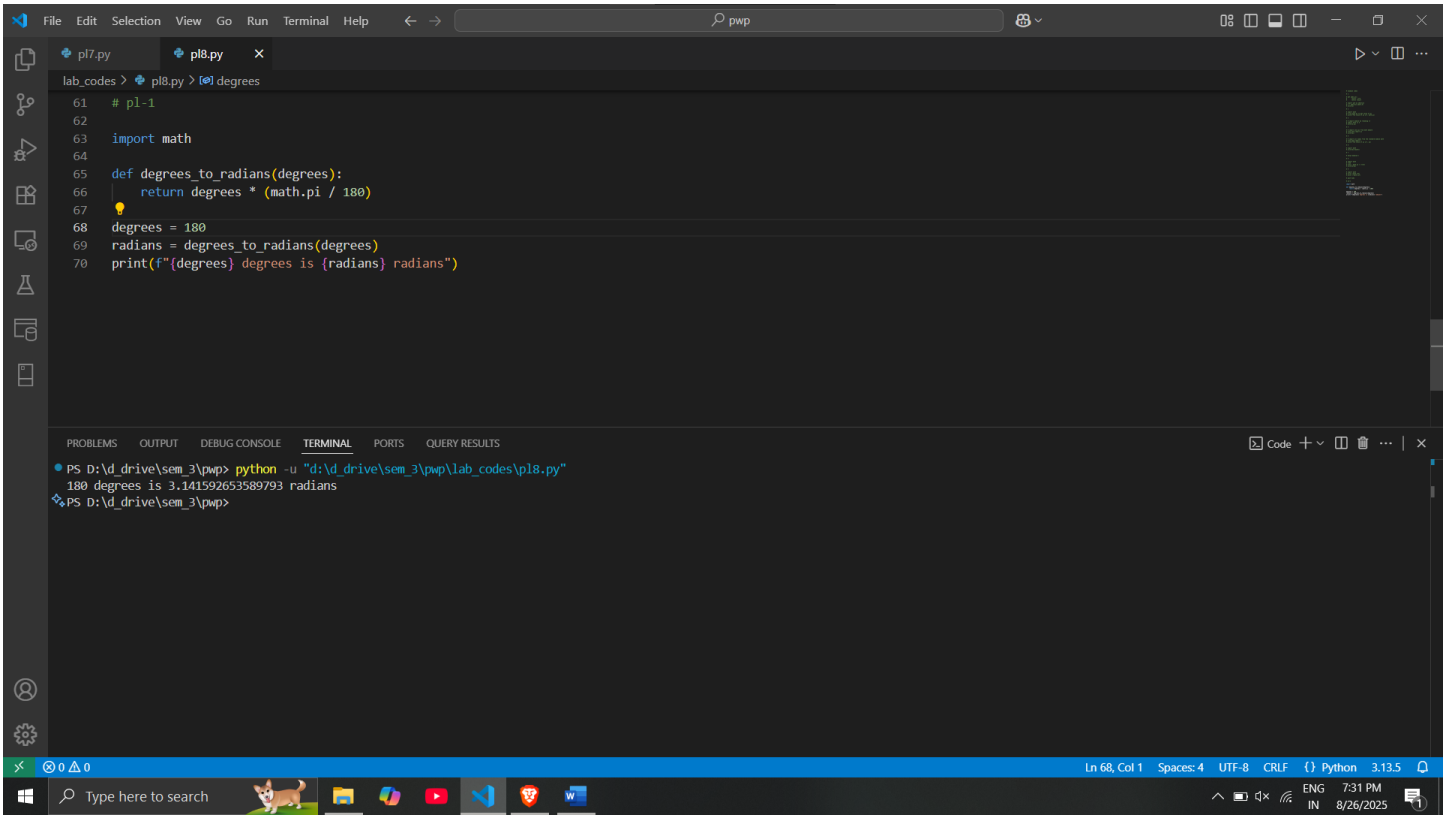
Post Lab Exercise:

a. Write a Python program to convert degree to radian



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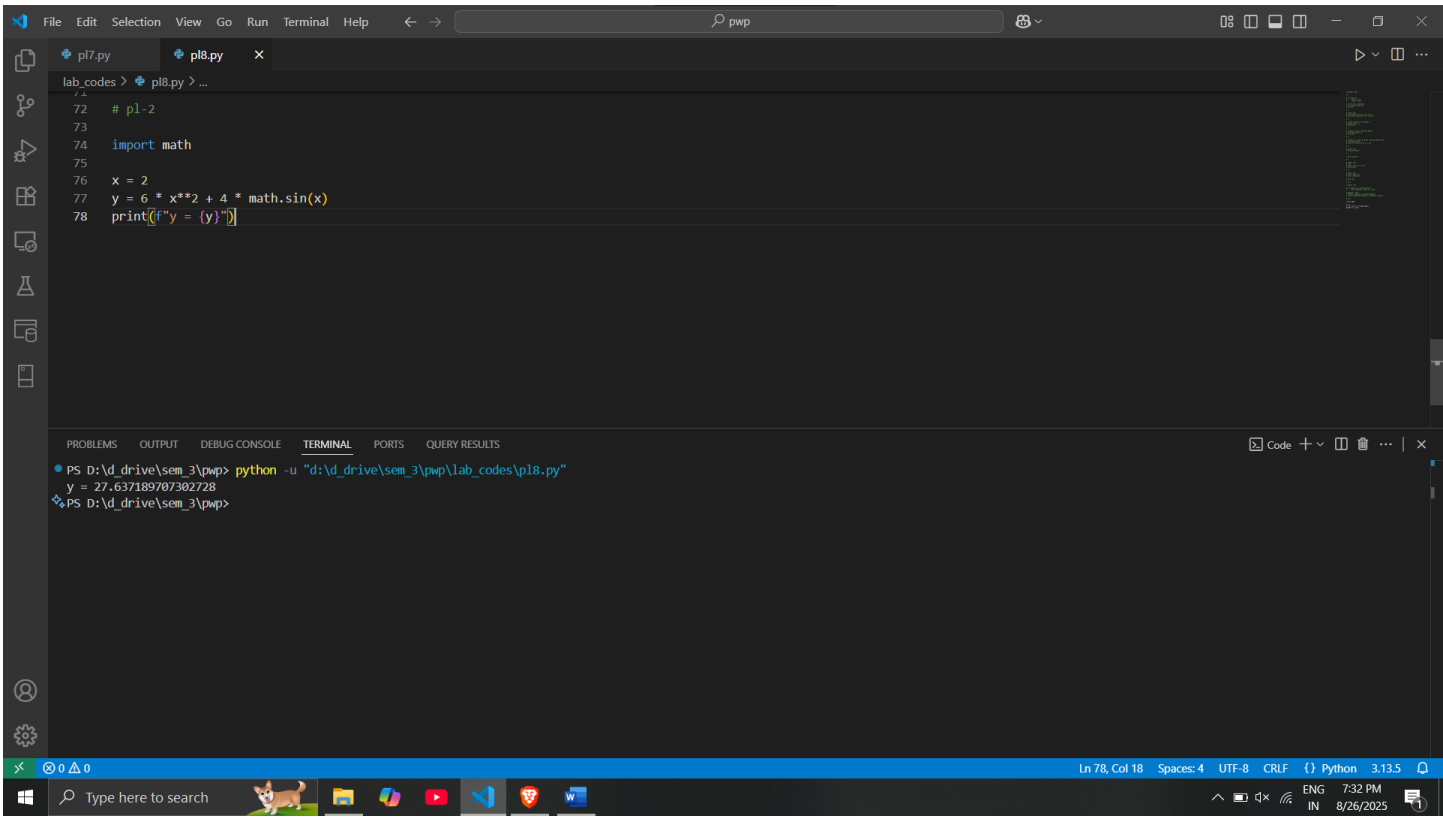
b. Make a simplest possible Python program that calculates and prints the value of the formula

$$y = 6x^2 + 4sin(x)$$



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c. Write a Python function that evaluates the mathematical functions $f(x) = cos(2x), f'(x) = -2\sin(2x)\,, and\ f''(x) = -4\cos(2x).$

Return these three values. Write out the results of these values for $x = \pi$