

Learning Objectives

By the end of this lesson, learners should be able to:

- Understand what a Python library is.
 - Know how to install and import a library.
 - Use popular libraries like `math`, `random`, and `datetime` with simple examples.
 - Practice with short, fun tasks using these libraries.
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What is a Python Library?

A **Python library** is a collection of pre-written code that you can use to perform common tasks without having to write everything from scratch.

Think of it like a **toolbox**. If you're building something, instead of making your own hammer, you just pull one out from the toolbox!

How to Use a Library in Python

1. Importing a Built-in Library

Python has many built-in libraries (you don't need to install them).

Example: `math`

```
import math
print(math.sqrt(16))    # Output: 4.0
print(math.pi)         # Output: 3.141592653589793
```

2. Importing Part of a Library

Sometimes, you don't need the whole toolbox.

```
from math
print("Square root of 36:", math.sqrt(36))
print("Sine of 90 degrees:", math.sin(math.radians(90)))
print("Power of 2^3:", math.pow(2, 3))
```

2. `random` – Generate random numbers

```
import random
```

```
print("Random number between 1 and 10:", random.randint(1, 10))
print("Random choice from a list:", random.choice(['apple', 'banana',
'cherry']))
```

3. datetime – Work with dates and time

```
import datetime

today = datetime.date.today()
print("Today's date is:", today)

now = datetime.datetime.now()
print("Current time:", now.strftime("%H:%M:%S"))
```

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