

# Import Statement

In Python, the ``import`` statement is used to include external modules or libraries into your script. This allows you to use the functionality that is provided by those modules without having to rewrite code i.e. you avoid writing repetitive code.

Key Uses of import in Python:

1. Importing Entire Modules: You can import an entire module, and then access its functions, classes, and variables by using the module name as a prefix.

```
import math
```

```
print(math.sqrt(16)) # Accesses the 'sqrt' function from the 'math' module
```

2. Importing Specific Functions or Objects from a Module: Instead of importing the entire module, you can import specific functions, classes, or variables.

```
from math import sqrt
```

```
print(sqrt(16)) # Directly using the 'sqrt' function without the 'math.' prefix
```

3. Using Aliases (Renaming Imports): You can give an alias (nickname) to the imported module or function for convenience.

```
import numpy as np
```

```
array = np.array([1, 2, 3, 4])
```

```
print(array)
```

4. Importing All Functions from a Module: You can import everything from a module using `*`. However, this is generally discouraged because it can make the code less readable and may cause conflicts with names.

```
from math import *
```

```
print(sqrt(16)) # Directly using sqrt after importing everything from math
```

**Common Python Modules:** Python comes with a large standard library that you can import and use. Some common modules include:

- math (for mathematical functions)
- os (for interacting with the operating system)
- sys (for system-specific parameters and functions)
- random (for generating random numbers)
- datetime (for working with dates and times)

Example of import in Python:

```
import random
```

```
# Generate a random number between 1 and 100
```

```
random_number = random.randint(1, 100)
```

```
print(f"Random number between 1 and 100: {random_number}")
```

In this example, the random module is imported, and the randint() function is used to generate a random integer between 1 and 100.