

```
# 1. What do you mean by __name__ == '__main__'
```

✓ What is a module?

Any file with an extension of .py is called a module in python.

Whenever we execute a program its module name is __main__ and this name is stored in __name__ variable

```
def display():
    print('hello')

display()
print(__name__)

hello
__main__
```

✓ Importing a module

- But what is the need to import a module?
- How to import a module

```
# import a module
import test
test.hello('nitish')

hello nitish
```

```
# import multiple module -> user defined + builtin
import math
import test

test.hello('nitish')
print(math.floor(4.3))

hello nitish
4
```

```
# show builtin modules
```

✓ Variations of import statement

```
# Normal
import math
import random
```

```
# clubbing together
import math,random,test
```

```
# importing specific names from module
from math import factorial,floor
from test import hello
```

```
print(factorial(5))
ceil(4.8)
```

```
120
-----
NameError                                Traceback (most recent call last)
<ipython-input-6-cbe7c40736a8> in <module>
      4
      5 print(factorial(5))
----> 6 ceil(4.8)

NameError: name 'ceil' is not defined
```

```
# renaming modules
import math as m
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
m.factorial(5)
```

```
120
```

```
from math import factorial as f
```

```
f(5)
```

```
120
```

▼ Order of execution of a module

```
import sys
for p in sys.path:
    print(p)

/content
/env/python
/usr/lib/python38.zip
/usr/lib/python3.8
/usr/lib/python3.8/lib-dynload
/usr/local/lib/python3.8/dist-packages
/usr/lib/python3/dist-packages
/usr/local/lib/python3.8/dist-packages/IPython/extensions
/root/.ipython
```

▼ if __name__ == __main__

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▼ What are packages in Python

A package in python is a directory containing similar sub packages and modules.

- A particular directory is treated as package if it has `__init__.py` file in it.
- The `__init__.py` file may be empty or contain some initialization code related to the package

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▼ What are 3rd party packages?

- The python community creates packages and make it available for other programmers
- PyPI -> Python Package Index
- You can upload your own package
- You can also install packages from PyPI and install using pip
- pip is a package manager utility
- it is automatically installed with python

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