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Batch: Data Engineering Batch-1

Python Modules

A Python_module is a file containing Python definitions and statements. A module can define functions, classes, and variables. A module can also include runnable code.

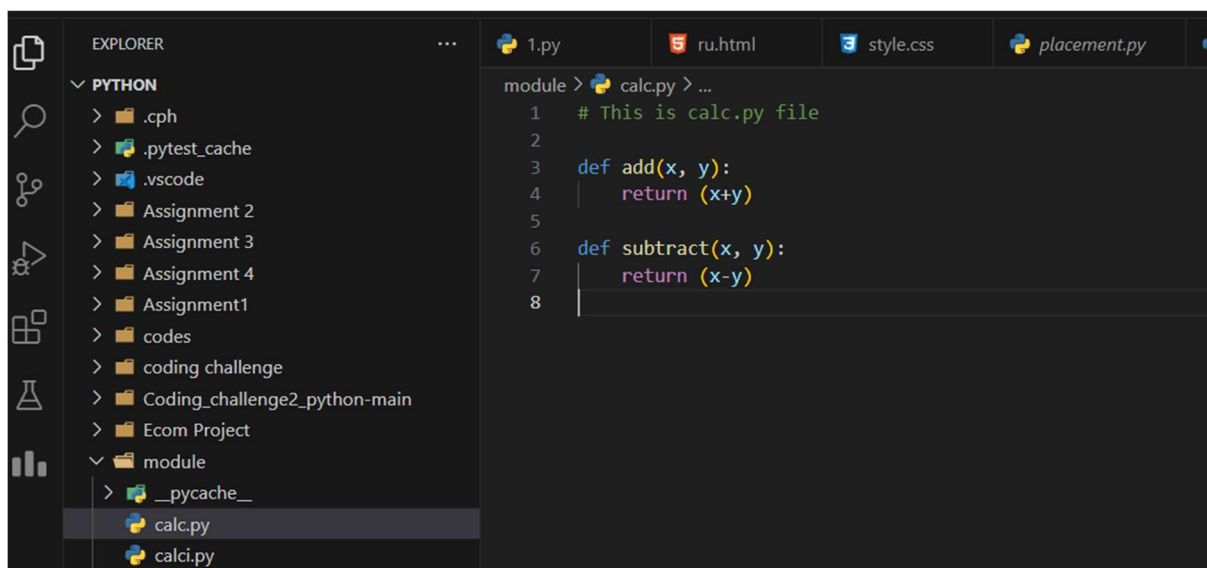
Grouping related code into a module makes the code easier to understand and use. It also makes the code logically organized.

Create a Python Module

To create a Python module, write the desired code and save that in a file with **.py** extension. Let's understand it better with an example:

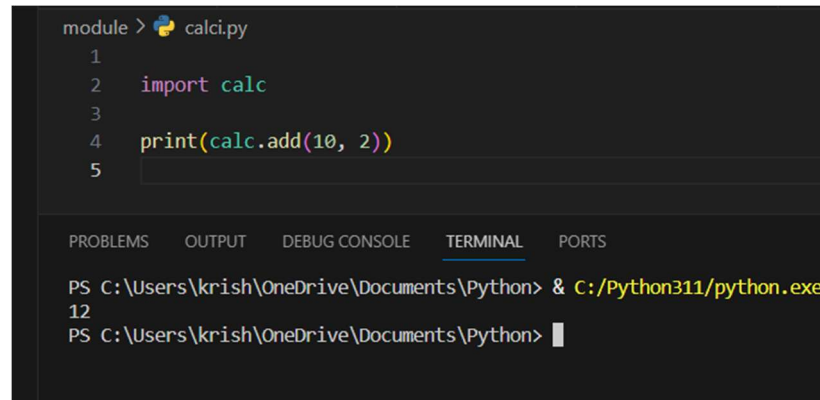
Example:

Let's create a simple `calc.py` in which we define two functions, one **add** and another **subtract**.



Importing modules in Python Example

Now, we are importing the **calc** that we created earlier to perform add operation.



The image shows a code editor window with a file named `calci.py`. The code in the editor is as follows:

```
1
2 import calc
3
4 print(calc.add(10, 2))
5
```

Below the code editor is a terminal window. The terminal shows the command to run the script:

```
PS C:\Users\krish\OneDrive\Documents\Python> & C:/Python311/python.exe calci.py
12
PS C:\Users\krish\OneDrive\Documents\Python>
```

Python Import From Module

Python's `from` statement lets you import specific attributes from a module without importing the module as a whole.

Import Specific Attributes from a Python module

Here, we are importing specific `sqrt` and `factorial` attributes from the `math` module.

Day 8 Python module Assessment

CPH JUDGE: RESULTS

Local: module

TC 1 Failed 107ms

Input: Copy

Expected Output: Copy

Received Output: Copy

5.0
3.141592653589793
114.59155902616465
1.0471975511965976
0.9092974268256817
0.8775825618903728
0.23414336235146527
24
1
0.4694939688620582
70.48225599215972
True
1706613427.2040071
1970-01-06

+ New Testcase

☐ Set ONLINE_JUDGE

Feedback

↺ +

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1.py ru.html style.css placement.py variable.py

module > module.py > ...

```
1 # importing built-in module math
2 import math
3
4 # using square root(sqrt) function contained
5 # in math module
6 print(math.sqrt(25))
7
8 # using pi function contained in math module
9 print(math.pi)
10
11 # 2 radians = 114.59 degrees
12 print(math.degrees(2))
13
14 # 60 degrees = 1.04 radians
15 print(math.radians(60))
16
17 # Sine of 2 radians
18 print(math.sin(2))
19
20 # Cosine of 0.5 radians
21 print(math.cos(0.5))
22
23 # Tangent of 0.23 radians
24 print(math.tan(0.23))
25
26 # 1 * 2 * 3 * 4 = 24
27 print(math.factorial(4))
28
29 # importing built in module random
30 import random
31
32 # printing random integer between 0 and 5
33 print(random.randint(0, 5))
34
35 # print random floating point number between 0 and 1
36 print(random.random())
37
38 # random number between 0 and 100
39 print(random.random() * 100)
40
```

Local: module

TC 1 Failed 107ms

Input: Copy

Expected Output: Copy

Received Output: Copy

5.0
3.141592653589793
114.59155902616465
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True
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1970-01-06

+ New Testcase

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Feedback

module > module.py > ...

```
35 # print random floating point number between 0 and 1
36 print(random.random())
37
38 # random number between 0 and 100
39 print(random.random() * 100)
40
41 List = [1, 4, True, 800, "python", 27, "hello"]
42
43 # using choice function in random module for choosing
44 # a random element from a set such as a list
45 print(random.choice(List))
46
47
48 # importing built in module datetime
49 import datetime
50 from datetime import date
51 import time
52
53 # Returns the number of seconds since the
54 # Unix Epoch, January 1st 1970
55 print(time.time())
56
57 # Converts a number of seconds to a date object
58 print(date.fromtimestamp(454554))
59
```

Day 8 Python module Assessment