

IMPORT

The Python Bakery

Modules

- Modules are Python Programs

Whenever you create a new Python program, you are actually creating a Module. In other words, a module is just a Python program. A module is useful, however, because it can be imported into another module. Any variables created in the module will then be available in the other module.

Terminology

- Module
- Library
- Package

Modules are sometimes also known as packages or libraries. Typically, a package is a collection of one or more modules. However, the words are all more-or-less interchangeable.

Import

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

To import data from another module, you use the Import statement.

There are three different ways to import a module.

The simplest is shown here, where we write the keyword import and the name of the module.

Once a module is imported, you can reference its definitions using the name of the module, a period (.), and then the name of the variable you want to use.

Specific Import

```
from math import pi  
  
print("The value of pi is", pi)
```

It can be bothersome to repeat the module name each time you want to use a function.

Therefore, Python has a convenient syntax for importing the functions directly. This version uses the "from" keyword, followed by the module name, the "import" keyword, and then the name of the function or other definition you want to use. Afterwards, you can use the variable as if it were defined in that file.

Standard Library

```
from string import digits  
  
print("The digits are", digits)
```

Python has a number of useful built-in modules called the Standard Library. Further, Python programmers have created many other "third party libraries" that are easy to install. Many of these modules come prepackaged in distributions that are easy to obtain. We will not cover all these modules in this course, but you will often come across them when solving real-world problems.

Installing New Libraries

```
> pip install pygame  
> pip install requests  
> pip install matplotlib
```

Although you may not have to do it very often, it is very easy to install new modules from a command line.

You can use the pip command to install a module.

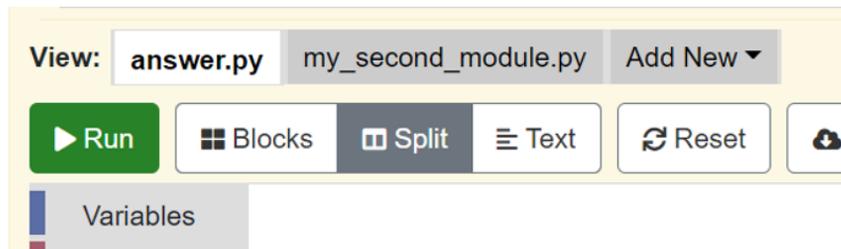
You will need to know the exact module name.

Make sure that you have the right module name; when you install a new module, you are trusting the developer to not install anything malicious!

Most modern editors, including Thonny, also include a package manager that let's you install packages without writing code.

BlockPy does not allow you to install new libraries, but you can at least write new modules.

New Modules in BlockPy



Most editors allow you to create additional Python files that can be imported into your main Python file.

BlockPy has this feature, but most problems disable that functionality so that you are not distracted.

Still, sometimes you will see an additional row of tabs that allow you to view and add new files.

In some cases, we'll have already created the file for you, but in others we may ask you to create the new file.

The second Python file will be available to be imported just like if it was in your local filesystem.

In this case, the external module would be `my_second_module.py`