

Python from Scratch

Python Modules

Lesson 24

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Python Modules

What is a Module?

Consider a module to be the same as a code library.

A file containing a set of functions you want to include in your application.

Create a Module

To create a module just save the code you want in a file with the file extension `.py`:

Example

Save this code in a file named `mymodule.py`

```
def greeting(name):  
    print("Hello, " + name)
```

Use a Module

Now we can use the module we just created, by using the `import` statement:

Example

Import the module named `mymodule`, and call the `greeting` function:

```
import mymodule  
  
mymodule.greeting("Jonathan")
```

Note: When using a function from a module, use the syntax: `module_name.function_name`.

Variables in Module

The module can contain functions, as already described, but also variables of all types (arrays, dictionaries, objects etc):

Example

Save this code in the file `mymodule.py`

```
person1 = {  
    "name": "John",  
    "age": 36,  
    "country": "Norway"  
}
```

Example

Import the module named mymodule, and access the person1 dictionary:

```
import mymodule  
  
a = mymodule.person1["age"]  
print(a)
```

Naming a Module

You can name the module file whatever you like, but it must have the file extension `.py`

Re-naming a Module

You can create an alias when you import a module, by using the `as` keyword:

Example

Create an alias for `mymodule` called `mx`:

```
import mymodule as mx  
  
a = mx.person1["age"]  
print(a)
```

Built-in Modules

There are several built-in modules in Python, which you can import whenever you like.

Example

Import and use the `platform` module:

```
import platform

x = platform.system()
print(x)
```

Using the `dir()` Function

There is a built-in function to list all the function names (or variable names) in a module. The `dir()` function:

Example

List all the defined names belonging to the `platform` module:

```
import platform

x = dir(platform)
print(x)
```

Note: The `dir()` function can be used on *all* modules, also the ones you create yourself.

Import From Module

You can choose to import only parts from a module, by using the **from** keyword.

Example

The module named **mymodule** has one function and one dictionary:

```
def greeting(name):  
    print("Hello, " + name)  
  
person1 = {  
    "name": "John",  
    "age": 36,  
    "country": "Norway"  
}
```

Example

Import only the person1 dictionary from the module:

```
from mymodule import person1  
  
print (person1["age"])
```

Note: When importing using the **from** keyword, do not use the module name when referring to elements in the module.

Example: **person1["age"]**, **not mymodule.person1["age"]**

Test Yourself With Exercises

Exercise:

What is the correct syntax to import a module named "mymodule"?

mymodule