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Summary

The `unittest.mock` module is Python's built-in mocking and patching module. Used to replace objects with fake implementations during testing.

`Mock` objects are callable. Mocks can return objects and trigger side effects when called.

Mocks record calls allowing assertions to be made regarding the usage of calls. Calls can be inspected closer through attributes on the mock object. Recorded calls can also be compared using the `unittest.mock.call` callable.

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Point of Interest

Code is commonly tightly coupled to external resources and services, making it more challenging to leverage mocks.

The below code demonstrates a function calling the built-in `print` callable. Testing this code poses a challenge because the `greeter` function depends on `print` which writes data to standard output by default.

```
1 def greeter(name: str):
2     ''' A function used to demonstrate the use of the patch call
3     print(f'Hello, {name}')
```

The `unittest.mock` module includes a mechanism called `patch` used to swap objects with mocks for a limited scope.

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1 from unittest.mock import patch
2
3 def greeter(name: str):
```

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3 def greeter(name: str):  
4     ''' A function used to demonstrate the use of the patch call  
5     print(f'Hello, {name}')
```

6
7 # Patch can be used as a context manager.
8 # The first argument is a target object to replace.
9 # The target is a str representing the package.module.object
10 with patch('builtins.print') as print_mock:
11 # The builtin print callable will be replaced inside this c
12 greeter('World')
13 # Inspect the mock version of the print callable and determ
14 # was provided with the expected input.
15 print_mock.assert_called_with('Hello, World')
16 print_mock.assert_called_once()
17
18 # Outside the context manager print behaves normally.
19 greeter('World')

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