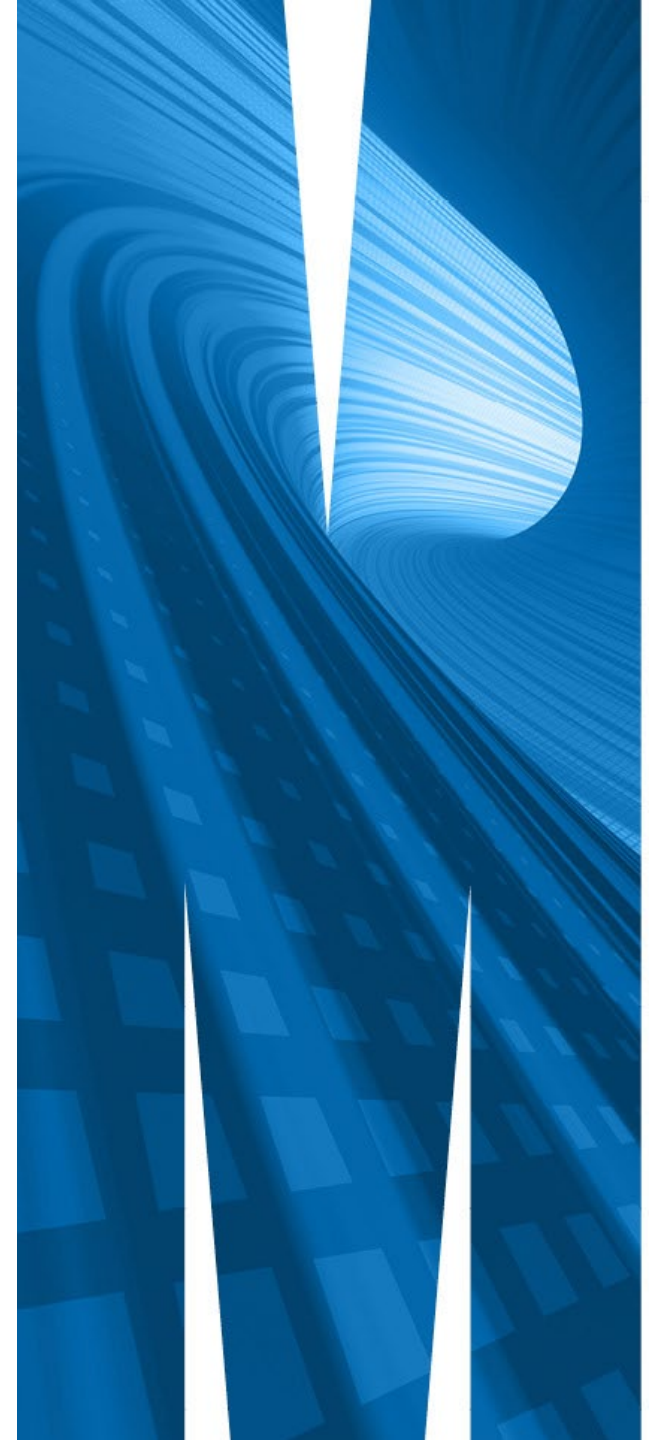


FIT2107-Software Quality & Testing

Lecture 9 – Mocking

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Announcement

- Assignment 2 Deadline
- Check Moodle discussions for more announcements

Outline

- Part A
 - What is Mocking
 - Why Mocking
- Part B
 - Mocking in Python
 - Twitter Example
 - Different Environments
 - A Practical Example
 - Mocking side effects

PART A: MOCKING

REFER TO MY READING RESOURCES & VIDEOS ON
MOODEL FOR MORE DETAILS

Mocking and why?

- Oxford Dictionary:
 - not authentic or real, but without the intention to deceive.
- So we create fake objects in unit tests. But when?
- To isolate the behavior of the object you want to replace the other objects by mocks that simulate the behavior of the real objects.
- An object under test may have dependencies on other (complex) objects. E.g.
 - Database calls
 - Webservices
- This is useful if the real objects are impractical to incorporate into the unit test.

PART B:

MOCKING IN PYTHON

Mocking in Python

- `import unittest.mock`
- <https://docs.python.org/3/library/unittest.mock.html>
- Inside your test method you will create a mock object.
 - `self.object = Mock()`

Example - Twitter

```
import unittest
from unittest.mock import Mock
import Twitter # name of my Twitter program that needs to be tested.

class TwitterTest(unittest.TestCase):
    def test_example(self):
        self.mock_twitter = Mock()
        Twitter.tweet(mock_twitter, "message")
    ...
    ...
```

REFER TO VIDEOS ON MOODLE FOR MORE
DETAILED DETAILS

Development, Staging and Production

- Development
 - New features
 - Tests
 - Testing environment
- Staging
 - When enough features have been developed and tested to satisfaction, they will be batched up into a single release and deployed to the staging environment.
- Production
 - Once all tests have been comprehensively passed and the client is happy, the new features/bug fixes will be deployed (pushed) here.

A practical Example - Twitter

- Norman Chen has recorded the videos to explain mocking in detail using the Twitter example.
- That is already uploaded on the Moodle.

Mocking Side Effects

- As a programmer, we only test the code success and failure scenarios.
- Sometimes, our code might also change the state or produce an unintended result/error - these are what we call side effects.
 - For example, writing data on the hard disk.
 - Raise exception or log an error.

