



Lab 8: CI/CD and Mocking

CMPUT 301 Winter 2025

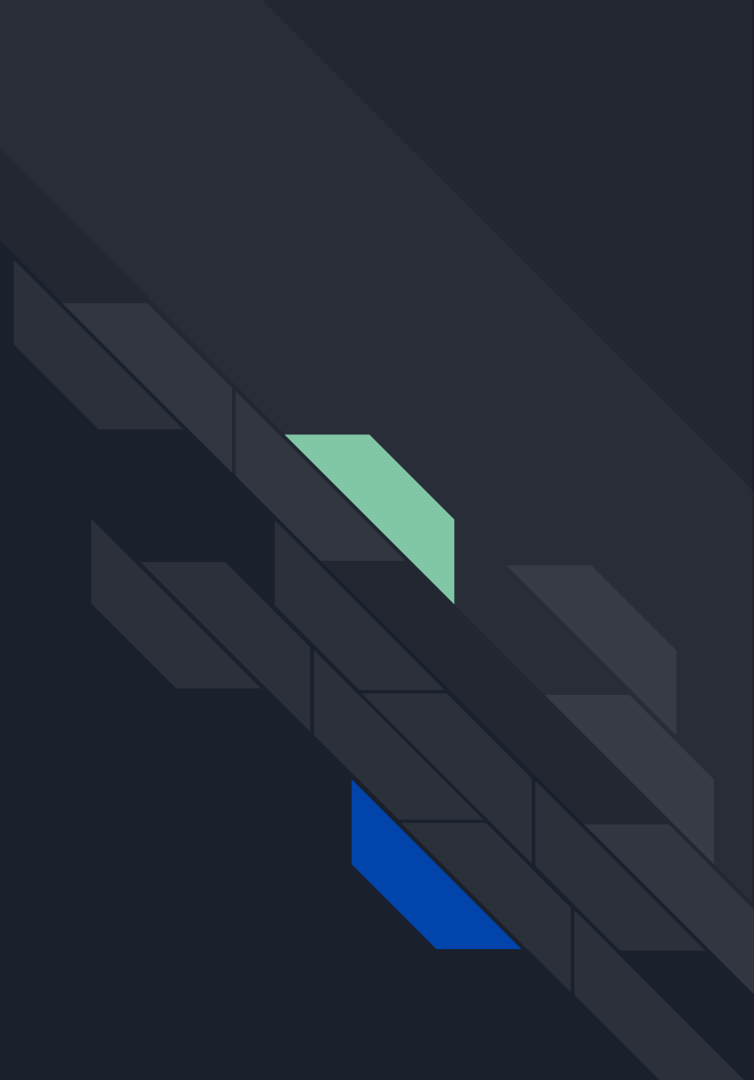


Common Coding Problems

How many times have you worked on an assignment, you implemented something, but then it broke later and you didn't notice it?

Or, you submitted an assignment, made some changes, but forgot to update your submission, or forgot to submit at all?

How can we prevent this?





Continuous Integration

A process where we automatically build, test, and analyze our software when we make changes to it.



Continuous Deployment

A process where we automatically deploy updates to our software if they pass a certain set of tests.

How CI Works

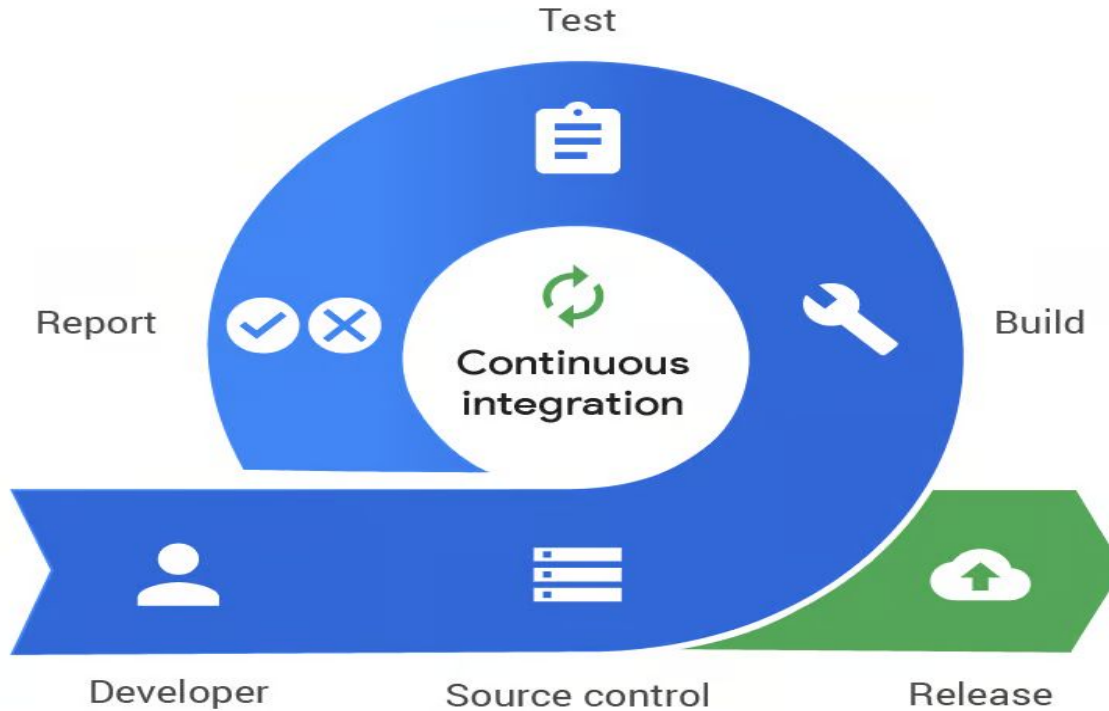
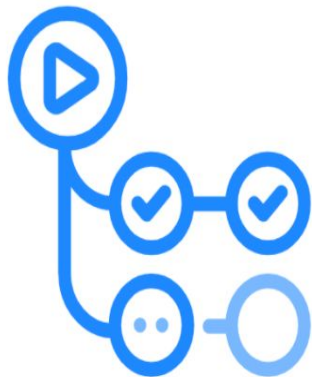


Image is from
<https://www.pagerduty.com/resources/learn/what-is-continuous-integration/>

GitHub Actions



GitHub Actions

For this course, we will be using GitHub Actions for CI.

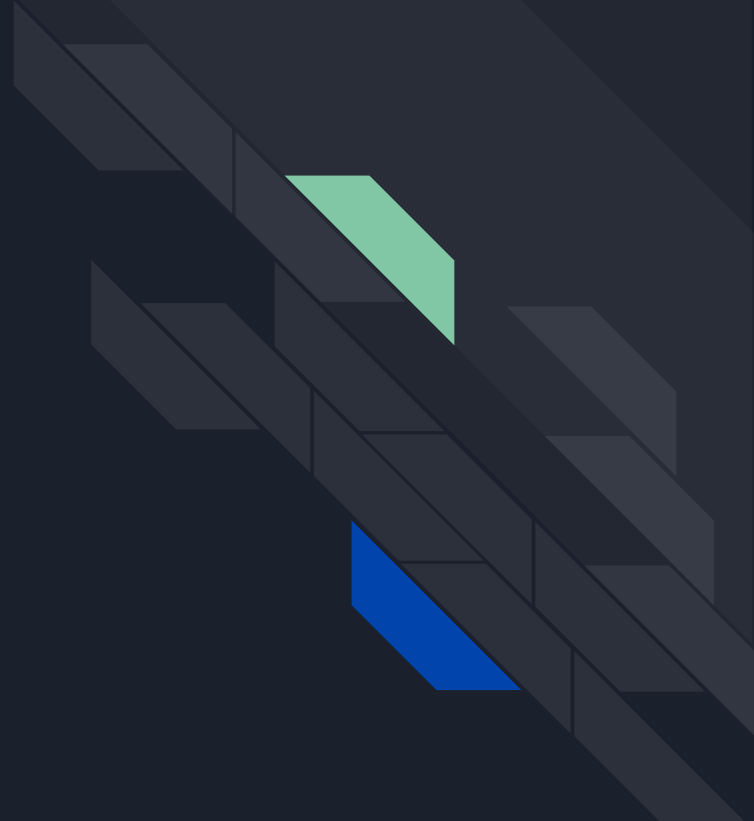


Unit Testing Problems

Last week, we saw how you can use a custom database for our unit tests, instead of a production version.

However, our unit tests are still dependent on our database functionality :(

How can we remove this
dependency?





Mocking

Mocking allows us to replace objects in our code with fake versions that we can define the behaviour of.

How Mocking Works

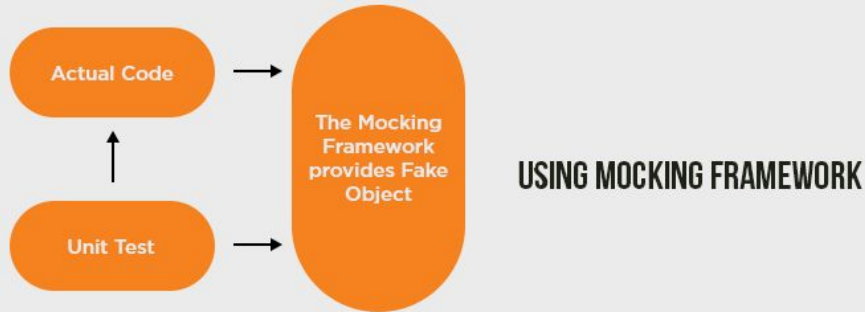
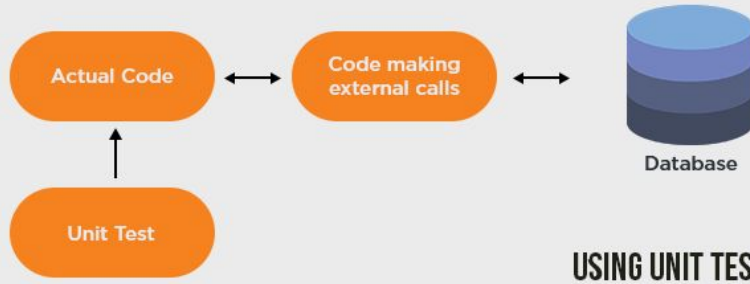


Image is from
<https://www.clariontech.com/blog/what-is-mocking-in-php-unit-testing>



Thank You!

Slides are based on the Lab 8 Slides posted on the class website
(https://ualberta-cmput301.github.io/labs/slides/Lab8_Slides.pdf)