Python Unit Testing Exercises

# Exercise 1: Math Operation Unit Tests

Use unittest to write unit tests for all the lambda functions in the operations module (ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION). The unit tests for ADDITION are already completed and you can use these as a guide for the other functions.

**Hint**: Don’t forget to test for error conditions and exceptions such as a divide by zero.

# Exercise 2: Calculator Integration Tests

Use unittest to write integration tests for the Calculator class. Remember that a unit test is used to test a class in isolation whereas an integration test is used to test multiple classes together.

**Hint**: The Calculator class uses constructor injection to inject an OperationFactory instance. If this were a unit test, we might inject a mock object. However, since this is an integration test, you can inject a new fully functioning OperationFactory instance.

# Exercise 3: Calculator Unit Tests

Use unittest and its mock package to write unit tests for the Calculator class. Remember that unit tests test a class in isolation. Since we want to write unit tests and the Calculator class uses constructor injection, we will need to inject a mock object.