

Experiment 3

Question

You are tasked with setting up a **Continuous Integration (CI) pipeline** for a software project. The project is the implementation of a **scientific calculator** that supports basic operations (addition, subtraction, multiplication, division) and advanced functions (square root, power, trigonometric functions).

Your experiment should include the following steps:

1. Project Setup:

- a. Implement a simple scientific calculator in Python.
- b. Organize the code into modules (e.g., `basic_operations.py`, `advanced_operations.py`).

2. Testing:

- a. Write **unit tests** to verify individual functions.
- b. Write **integration tests** to check combined functionality (e.g., evaluate an expression that uses both addition and trigonometric functions).

3. Setup CI Pipeline (using GitHub Actions)

4. Observation & Analysis:

- a. Push code changes to GitHub.
- b. Observe how the pipeline runs automatically.
- c. Record what happens when tests pass vs. when tests fail.

Submission Instructions:

1. Students must upload a single PDF file containing the report of the experiment conducted.
2. The report should contain code(s), step-by-step procedure followed, output snapshots and any other asked details.
3. The PDF name should be in the form "StudentName_SAPID".