

# CODE COVERAGE ASSIGNMENT

## 1. Program Development

Write a simple program in any one of the following programming languages:

**Python, Java, JavaScript**, or any language you are comfortable with.

- Your program should include at least **3 to 4 distinct functions or methods** that perform different tasks.
- Make sure your code is modular and logically organized.

## 2. Write Partial Unit Tests

Write **unit tests** for **some (but not all)** of the functions you created in Question 1.

### Questions:

- a) Which functions did you choose to test and why?
- b) Provide the code for your test cases.

## 3. Measure Code Coverage

Use an appropriate tool to **measure code coverage** for your program and unit tests.

Example tools:

- **coverage.py** with **pytest** for Python
- **JaCoCo** for Java
- **Istanbul/nyc** or **Jest** for JavaScript

### Questions:

- a) Which code coverage tool did you use?
- b) How did you install and run the tool?
- c) What is the current code coverage percentage of your program?
- d) Include a screenshot

#### **4. Improve Coverage**

Now improve your test suite to **increase code coverage to at least 90%**.

##### **Questions:**

- a) Which additional functions or scenarios did you test to improve the coverage?
- b) Share the improved test cases.
- c) Re-run the code coverage tool. What is the new coverage percentage?
- d) Attach a screenshot or export of the updated report.

##### **Submission Checklist**

- Source code of your program
- Initial test cases
- Code coverage report before and after improvements
- Final set of test cases
- A brief explanation for each step