

Software Construction and Testing Project Winter 2024

Dr. Ahmed Maghawry
TA Nadeen Serag
TA Menna Singergy

1 Project Overview

1.1 Team Formation

A team should consist of 4-5 members.

1.2 Project Idea

This project should cover any of the suggested ideas:

- **Restaurant Reservation and Management System**
- **E-commerce Website**
- **Personal Finance Tracker with Budget Recommendations**
- **E-Learning Course Management System**
- **Any Idea of your own ; however, you will need to discuss it with the TA**

1.3 Idea Description

Description of the previously mentioned ideas:

- **Restaurant Reservation and Management System** : Implement a web application where customers can reserve tables, order food, and provide feedback. The admin side could manage bookings, view feedback, and update menu items.
- **E-commerce Website** : Develop a website that allows users to browse, search, purchase products online, and get notifications while providing a seamless shopping experience and robust administrative features. The

- **Personal Finance Tracker with Budget Recommendations :** Create an app to track expenses and incomes, set budgets, and offer spending recommendations. Include data visualizations and reports.
- **E-Learning Course Management System :** Build an online course platform where instructors can create courses, add lessons, upload resources, and manage students. Students can enroll, view content, and track their progress.

1.4 Points To Be Covered In Project

The points that **must** be covered throughout the project:

- **Programming Paradigms :** Look for the use of declarative and imperative programming styles.
- **Design Patterns :** Assess the implementation of design patterns.
- **Test-Driven Development (TDD) :** Evaluate the use of TDD in the project.
- **Testing Techniques and Coverage :** Examine the testing techniques used (unit testing, integration testing , etc.) and the test coverage achieved (front-end and backend testing) .
- **Code Quality :** Ensure adherence to clean code principles, SOLID principles, and separation of concerns. Evaluate the code's maintainability, readability, and modularity.

2 Milestone 1 (Deadline: 15/11/24)

This milestone holds 10% of the total grade.

- **Task:** Draw the proposed system architecture (monolithic, tiered/layered, microservices) and select the desired programming framework.
- **Bonus :** Drawing the desired architecture diagrams (class diagram, sequence diagram, entity diagram, etc)
- **Submission :** A Google Form will be sent to upload your system architecture and diagrams.

3 Milestone 2 (Deadline: 7/12/24)

This milestone holds 15% of the total grade.

- **Task:** Deliver the beta version of the software with no syntax errors, ensuring it works for the happy path scenarios.

- **Review :** TA reviews the beta version and provides feedback.
- **Evaluation :** Evaluation will be made during the normal labs. Scheduling is made on a first-come, first-served basis. (you can choose any lab you like since cross-teams are allowed). Each team has 20 mins to showcase their project.

Note: The beta version is a sample of your compiled code.

4 Enhancement Phase

Apply feedback provided by TA or further enhance the project (refactor, review, and regression testing).

5 Milestone 3 (Deadline: 23/12/24)

This milestone holds 15% of the total grade.

- **Final Delivery :** Complete and discuss the final version of the project.

6 Cheating Cases

- **Case 1:** If your diagrams/code was generated using any AI tool, this will result in 0 for the whole project.
- **Case 2 :** If 2 teams have the same code, this will result in 0 for the whole project.