

**Assignment**  
**Software Quality Assurance**  
**3rd Year 2025**

**University of Colombo School of Computing**

**Section 1 - Online Quizzes on Concepts**

Please answer all quizzes if you couldn't answer them during the lectures.

Quiz 1: <https://forms.gle/XhAW3UFuUDrqaiC78>

Quiz 2: <https://forms.gle/pYzrqvbAVnR7BPX38>

**Section 2 - Industry Use Case - Test Strategy and Test Cases**

1. Identify FIVE software risks and mitigation plans for testing with the criticality for the below requirement.

Application: A new **Online Library Management System** is being developed for a university.

- Users (students) must be able to log in with valid credentials.
- They can search for books by title, author, or ISBN.
- Books can be borrowed online if available, and the system should update availability in real time.
- After borrowing, the student should receive a confirmation email with due date details.
- The librarian should be able to generate reports on borrowed/returned books.

#	Product Risks	Criticality	Mitigation
1			
2			
3			
4			
5			

2. Go through the application and requirements above, identify a few functionalities, and derive 10 test scenarios using the following test design concepts.

- a. Boundary Value Analysis (BVA)
- b. Equivalence Class Partitioning
- c. Decision Table-based testing.
- d. State Transition
- e. Error Guessing

TC ID	Test Objective	Pre Conditions	Steps	Expected Results	Actual Results	Testing Technique Used
1						
2						
3						

3. Identify how Artificial Intelligence (AI) can be integrated into the software testing workflow of this system and list down at least five areas where AI can support or enhance testing activities.