W2-S3 PRACTICE

OOP MICRO PROJECTS

Instructions

- **Choose only 1project among the 2 proposed**
- Teams of 2 students
- You will need to defend your solutions (UML and code) during a 3 min presentation
- Outputs:
  - o **The UML diagram** to support a **given system requirements**
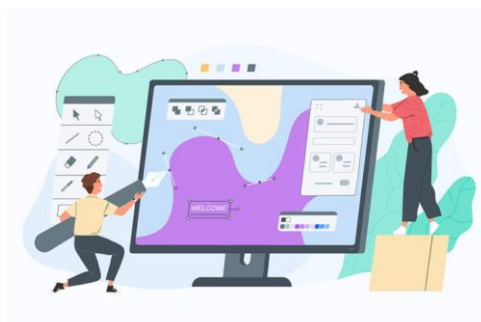 - o **The Dart code** (classes and main code to test your solution)

No AI tools allowed to solve this practice

How to submit?

✓ **During defence**

PROJECT 1 – Quiz

In this exercise, you will design a class diagram (UML) for a quiz system and implement Dart code.

Q1 – Design the **UML diagram**

- ✓ The system should manage a Quiz that contains multiple Question objects
- ✓ Each question can be of two types: SingleChoice or MultipleChoice
- ✓ Each question contains a title and answer options
- ✓ For SingleChoice, only one answer is correct
- ✓ For MultipleChoice, multiple answers can be correct

- ✓ The system should also store each participant's results for the quiz.
- ✓ Participants ca be represented with a first name and last name

Q2 – Implement the UML class in Dart

- Display the quiz result for each participant, showing their score.
- Ensure that a single choice question allows only one answer, while a multiple-choice question allows multiple answers.

PROJECT 2 - Restaurant Management System

Q1 – Design the **UML diagram**

Key elements:

- Menu: Contains a list of food or drink
- Order: Represents an order placed by a customer
- Table Reservation: Handles the reservation of tables in the restaurant.
- Customer: Represents a customer who can place orders and reserve tables.

Q2 – Implement the UML class in Dart

The system should:

- Add Menu Items to the restaurant's menu.
- Manager orders: order status, payment status, total price etc.
- Manager reservations and manage table availability.