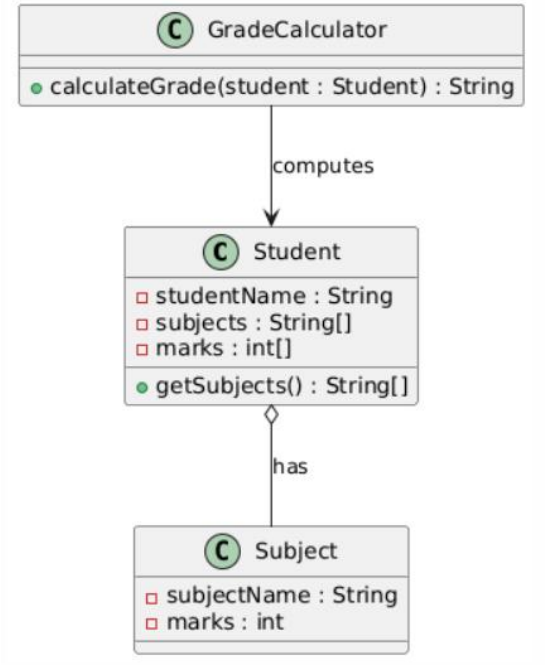
Problem 1: School Results Application

Class Diagram

Diagram Description: Classes: Student, Subject, GradeCalculator
Relationships:
A Student has multiple Subject entries (Aggregation).
GradeCalculator computes the results for a Student.



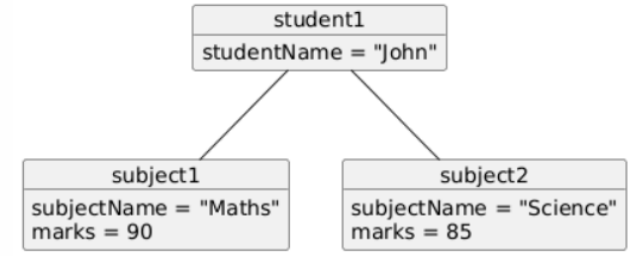
Object Diagram

Example:

Student: John

Subjects: Maths, Science

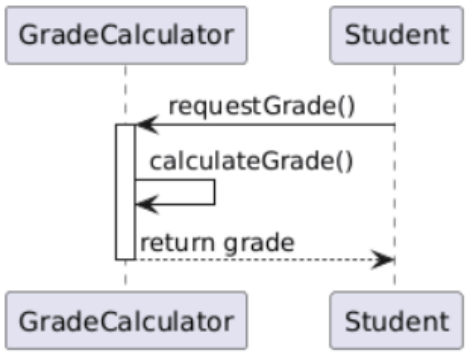
Marks: 90, 85



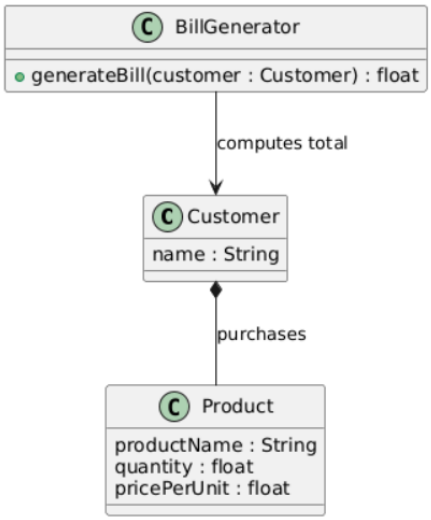
Sequence Diagram

Scenario: A student requests their grade based on marks in subjects.

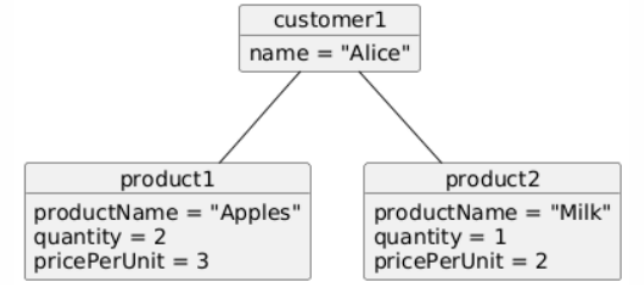
Actors: Student, GradeCalculator



Sample Problem 2: Grocery Store Bill Generation Application
Class Diagram
Diagram Description: Classes: Customer, Product, BillGenerator
Relationships:
A Customer can purchase multiple Product items (Composition).
BillGenerator computes the total for the Customer.



Object Diagram
Example:
Customer: Alice
Products: Apples (2 kg at $3 per kg) & Milk (1 liter at $2 per liter)



Sequence Diagram

Scenario: A customer checks out at the grocery store, and the total bill is generated.

Actors: Customer, BillGenerator