Grocery Store Bill Generation Application

Class Diagram

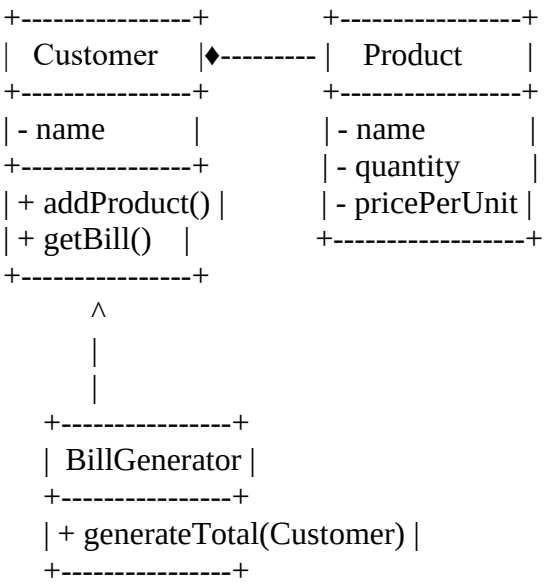
Classes and Relationships:

- Customer
  - Attributes: `name`
  - Methods: `addProduct(Product p)`, `getBill()`
- Product
  - Attributes: `name`, `quantity`, `pricePerUnit`
- BillGenerator
  - Methods: `generateTotal(Customer customer)`

Relationships:

- A Customer composes multiple Products → Composition (`filled diamond`).
- BillGenerator depends on Customer.

UML Representation:

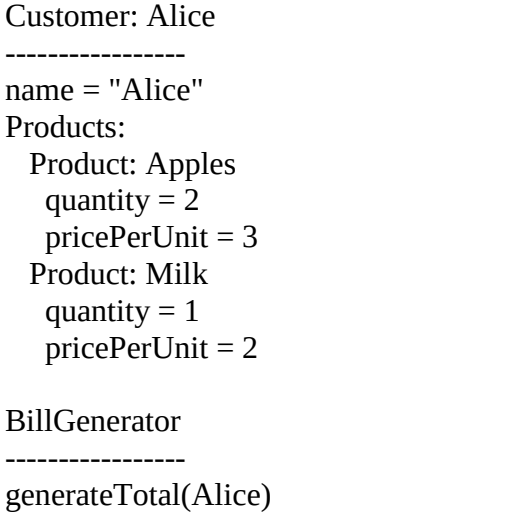


Object Diagram

Example Scenario:

- Customer: `Alice`
- Products:
  - Apples: 2 kg @ $3/kg
  - Milk: 1 liter @ $2/liter
- BillGenerator calculates total.

UML Representation:-



Sequence Diagram

Scenario: Customer checks out.

- Actors: Customer, BillGenerator
- Flow:
    1. Customer → BillGenerator: `requestBill()`
    2. BillGenerator → Customer: `getProducts()`
    3. BillGenerator calculates total
    4. BillGenerator → Customer: `returnTotal()`

UML Representation:-