

# Grocery Store Bill Generation Application

## 1. Class Diagram

```
+-----+
| Customer   |
+-----+
| - name      |
| - products[] |
+-----+
| + addProduct() |
| + checkout()  |
+-----+
|
| (Composition)
|
v
+-----+
| Product    |
+-----+
| - productName |
| - quantity   |
| - pricePerUnit |
+-----+
| + getPrice() |
+-----+
+-----+
| BillGenerator |
+-----+
| + calculateTotal() |
+-----+
Explanation: A Customer has multiple Products (composition). BillGenerator calculates the total bill using customer data.
```

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## 2. Object Diagram

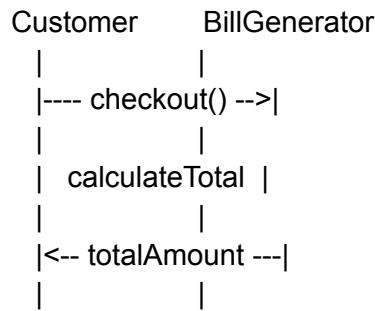
**Customer:** Alice **Products:**

- **Product 1:** Apples | Quantity: 2 kg | Price: \$3 per kg
- **Product 2:** Milk | Quantity: 1 liter | Price: \$2 per liter

**BillGenerator:** Used to calculate total bill.

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### 3. Sequence Diagram



**Step-by-Step Flow:**

1. Customer selects grocery products.
  2. Customer requests checkout.
  3. BillGenerator calculates total price.
  4. Total bill amount is returned to the customer.
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### 4. Final Bill Calculation

- **Apples:**  $2 \times 3 = \$6$
- **Milk:**  $1 \times 2 = \$2$
- **Total Bill:** \$8