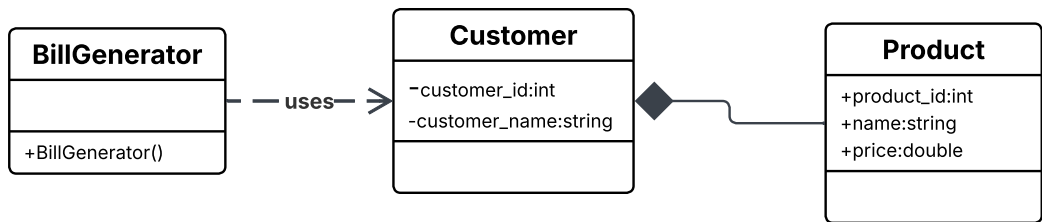# Grocery Store Bill Generation Application
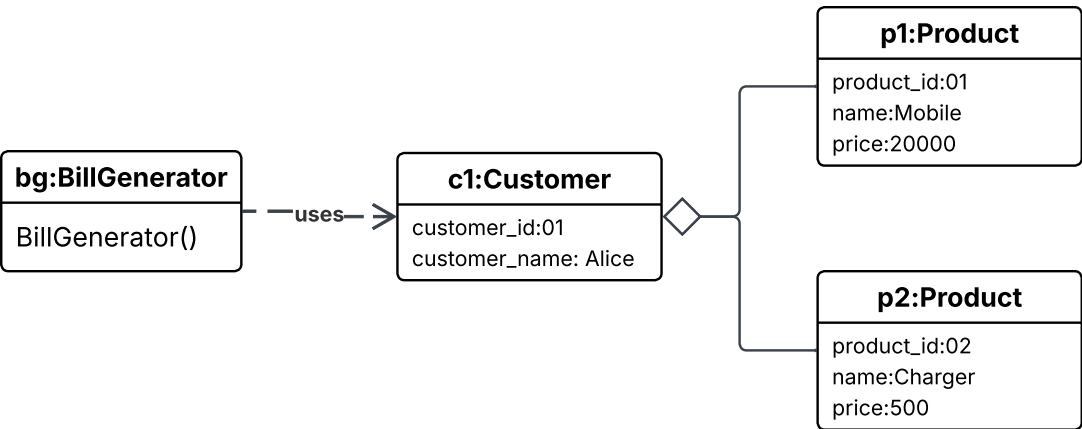
Class Diagram
o Diagram Description:
- Classes: Customer, Product, BillGenerator
- Relationships:
- A Customer can purchase multiple Product items (Composition).

```
┌─────────────────┐         ┌─────────────────────┐        ┌──────────────────────┐
│  BillGenerator  │         │      Customer       │        │       Product        │
├─────────────────┤         ├─────────────────────┤        ├──────────────────────┤
│                 │──uses──▶│ -customer_id:int    │◆──────┐│ +product_id:int      │
├─────────────────┤         │ -customer_name:string│       │ +name:string         │
│ +BillGenerator()│         ├─────────────────────┤        │ +price:double        │
└─────────────────┘         └─────────────────────┘        ├──────────────────────┤
                                                            └──────────────────────┘
```

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

```
                                                        ┌──────────────────────┐
                                                        │     p1:Product       │
                                                        ├──────────────────────┤
                                                        │ product_id:01        │
┌────────────────────┐      ┌──────────────────────┐   │ name:Mobile          │
│  bg:BillGenerator  │      │     c1:Customer      │   │ price:20000          │
├────────────────────┤      ├──────────────────────┤   └──────────────────────┘
│  BillGenerator()   │─uses▶│ customer_id:01       │◇─┐
└────────────────────┘      │ customer_name: Alice │  │ ┌──────────────────────┐
                            └──────────────────────┘  │ │     p2:Product       │
                                                      │ ├──────────────────────┤
                                                      └─│ product_id:02        │
                                                        │ name:Charger         │
                                                        │ price:500            │
                                                        └──────────────────────┘
```

Sequence Diagram
o Scenario: A customer checks out at the grocery store, and the total bill is
generated.
o Actors: Customer, BillGenerator

```
   ┌───────────┐                    ┌───────────────┐
   │ Customer  │                    │ BillGenerator │
   └───────────┘                    └───────────────┘
         ┊                                  ┊
         │────────Request Bill─────────────▶│
         ┊                                  │───┐
         ┊                                  │   │ Generate Bill
         ┊                                  │◀──┘
         │◀───────Return Bill───────────────│
         ┊                                  ┊
         ▼                                  ▼
```