

## State Diagram — Customers and The Sales Floor

**Purpose:** Show the states a customer can go through while on the sales floor.

### States:

1. **Browsing** — customer looks at plants.
2. **Requesting Recommendation** — customer asks staff for advice.
3. **Customising Plant** — customer decides to personalise plant.
4. **Purchasing** — customer checks out.
5. **Finished** — transaction completed.

### Transitions:

- `browsePlants()` → Browsing → Requesting Recommendation
  - `requestRecommendation()` → Requesting Recommendation → Browsing/Customising Plant
  - `customisePlant()` → Customising Plant → Purchasing
  - `purchasePlant()` → Purchasing → Finished
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## 3 Activity Diagram — Purchasing Flow

**Purpose:** Show the workflow for a customer buying a plant.

### Steps:

1. **Start**
  2. Customer browses plants → `browsePlants()`
  3. Decision: Want a recommendation?
    - Yes → Customer requests recommendation → `requestRecommendation()`
    - No → Continue browsing
  4. Customer selects plant → `selectPlant()`
  5. Decision: Plant available?
    - Yes → Add to cart → `purchasePlant()`
    - No → Browse again
  6. Checkout → `processTransaction()`
  7. **End**
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## 4 Sequence Diagram — Plant Purchase

**Purpose:** Show interaction sequence.

### Lifelines:

- Customer
- SalesFloor
- Staff
- Inventory
- Transaction

### Messages:

1. Customer → SalesFloor: `browsePlants()`
2. SalesFloor → Inventory: `checkAvailability(plantName)`
3. Inventory → SalesFloor: `availabilityStatus`
4. SalesFloor → Customer: `displayPlants(Plant[])`
5. Customer → Staff: `requestRecommendation()`
6. Staff → Customer: `giveAdvice(String advice)`
7. Customer → SalesFloor: `purchasePlant(Plant plant)`
8. SalesFloor → Transaction: `processTransaction(Customer, Plant[])`
9. Transaction → Inventory: `updateStock(Plant[])`
10. Transaction → Customer: `confirmPurchase(Boolean)`

## 5 Communication Diagram — Customer Purchase

**Purpose:** Shows relationships and messages for purchasing process.

### Objects:

- Customer:customer1
- SalesFloor:salesFloor1
- Staff:staff1
- Inventory:inventory1
- Transaction:transaction1

### Message flow:

- 1 → Customer: `browsePlants()`
- 2 → SalesFloor: `checkAvailability()`
- 3 → Inventory: `return availability`
- 4 → SalesFloor: `displayPlants()`
- 5 → Customer: `requestRecommendation()`
- 6 → Staff: `giveAdvice()`
- 7 → Customer: `purchasePlant()`
- 8 → SalesFloor: `processTransaction()`
- 9 → Transaction: `updateStock()`
- 10 → Customer: `confirmPurchase()`

## 6 Object Diagram — Snapshot

**Purpose:** Snapshot of a real moment in the system.

**Example:**

- customer1 : Customer {name="Palesa", budget=300.0, preferences=["low maintenance"]}
  - plant1 : Plant {name="Rose", price=15.0, careRequirements="Full sun"}
  - staff1 : Staff {name="John", role="Sales Assistant"}
  - salesFloor1 : SalesFloor {plantsAvailable=[plant1, plant2], staffOnFloor=[staff1]}
  - inventory1 : Inventory {stockList=[plant1, plant2, plant3]}
  - transaction1 : Transaction {transactionID="T001", customer=customer1, plantList=[plant1], totalAmount=15.0}
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✅ Now you have **all UML diagrams** for *"The Customers and The Sales Floor"*:

- Class Diagram
- State Diagram
- Activity Diagram
- Sequence Diagram
- Communication Diagram
- Object Diagram