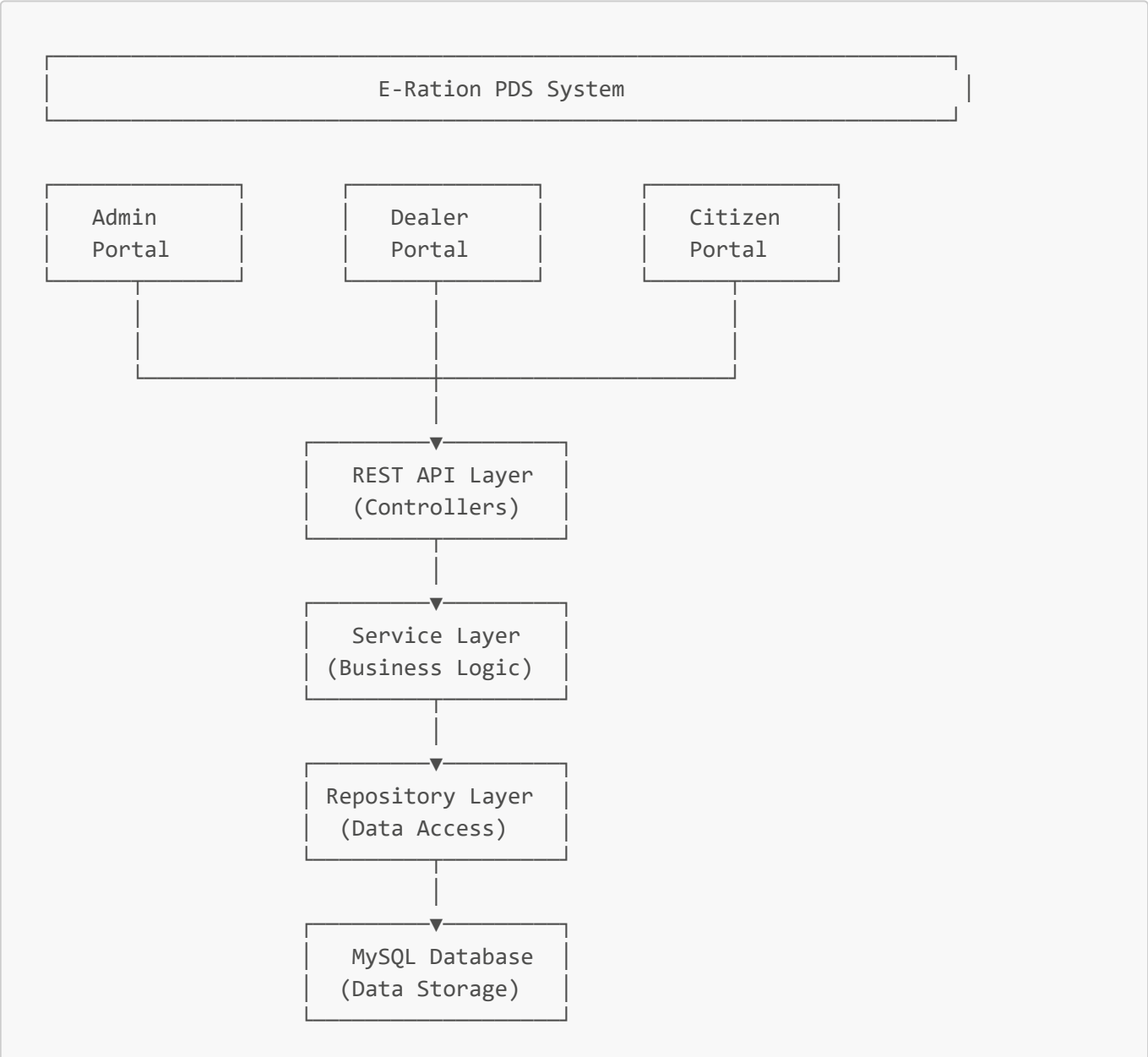


E-Ration PDS System - Complete System Flow Diagrams

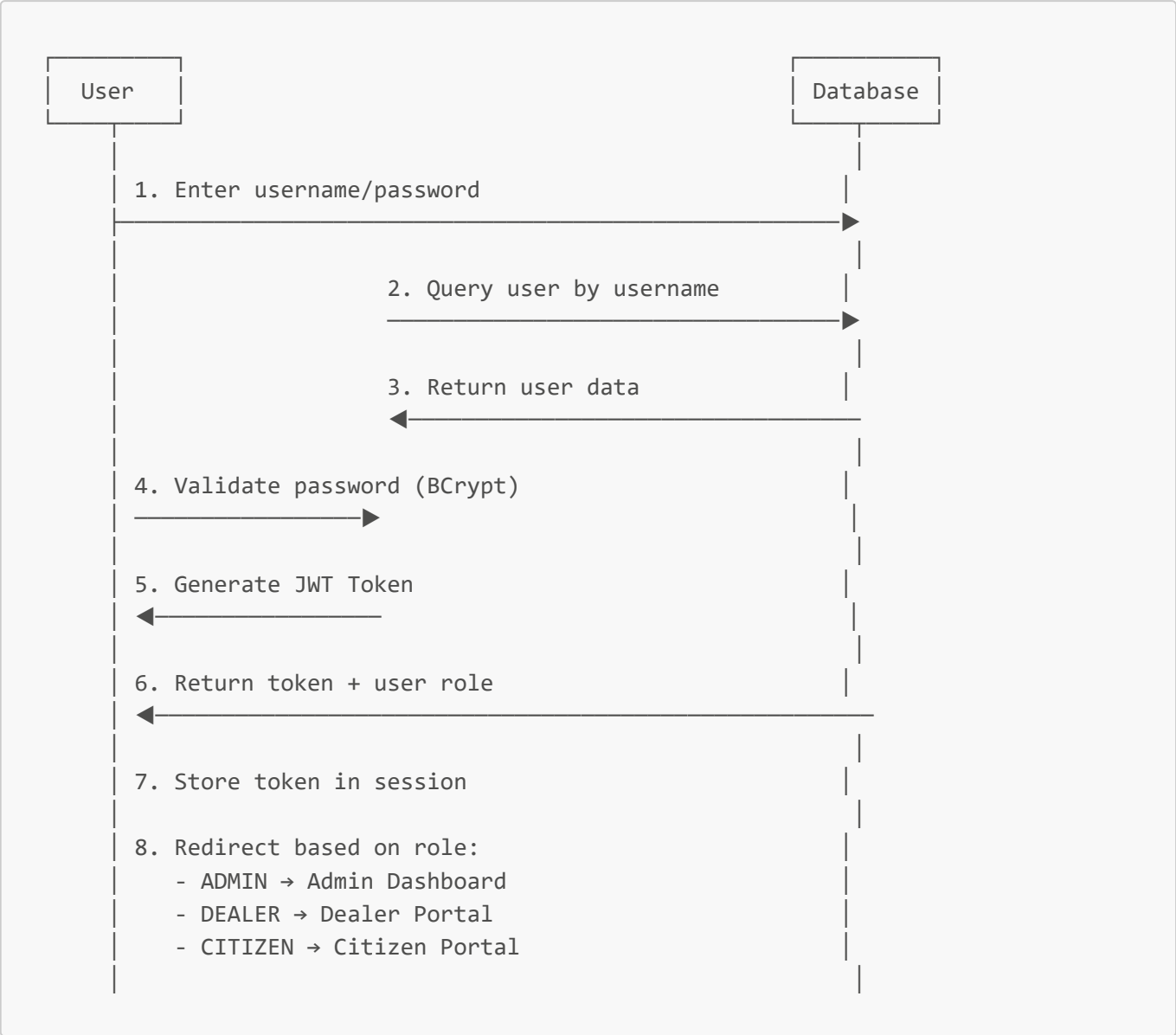
Table of Contents

- 1. [System Architecture Overview](#)
- 2. [User Authentication Flow](#)
- 3. [Registration Flows](#)
- 4. [Distribution Flow](#)
- 5. [Inventory Management Flow](#)
- 6. [Quota Management Flow](#)
- 7. [Admin Dashboard Flow](#)
- 8. [Database Schema Relationships](#)

System Architecture Overview

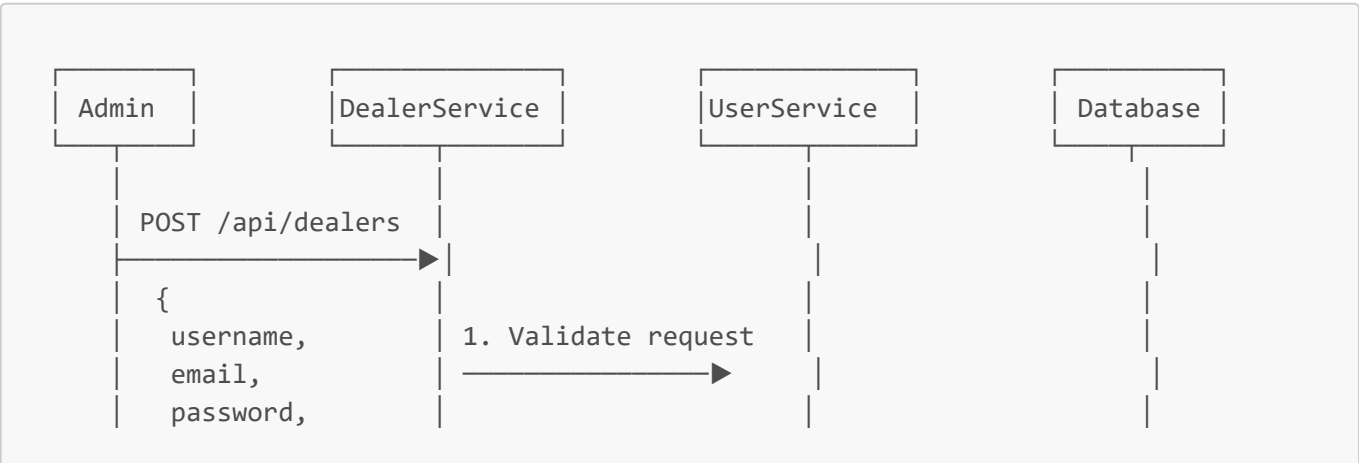


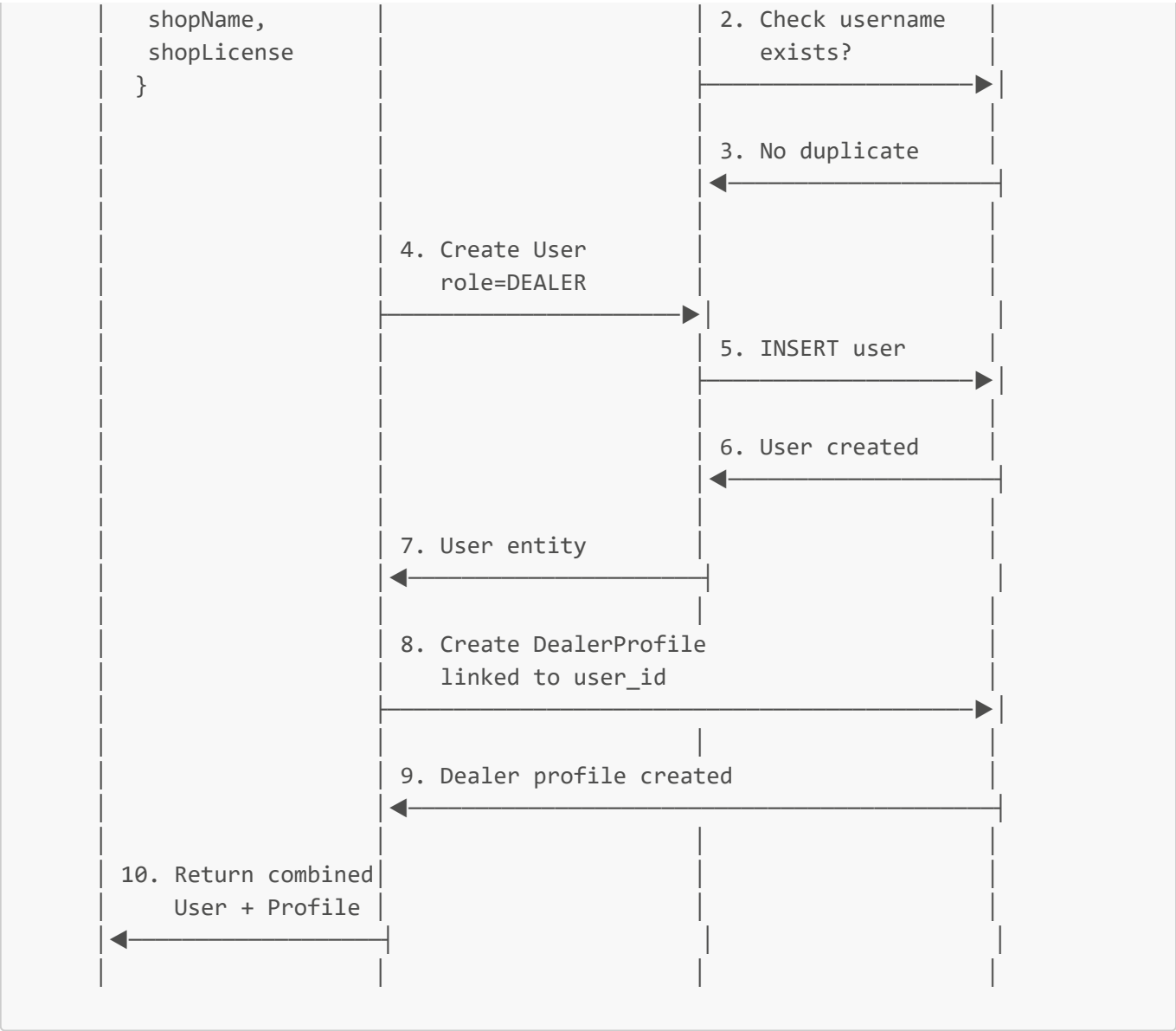
User Authentication Flow



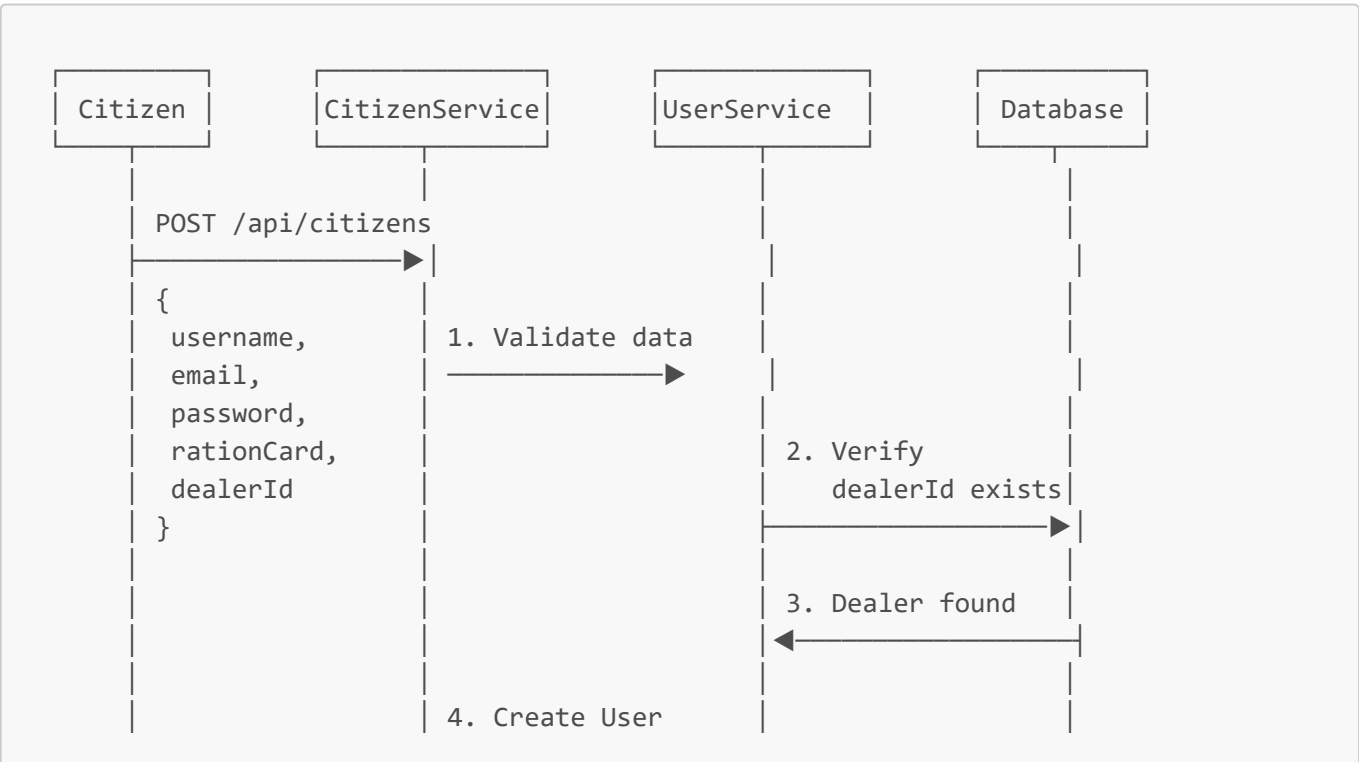
Registration Flows

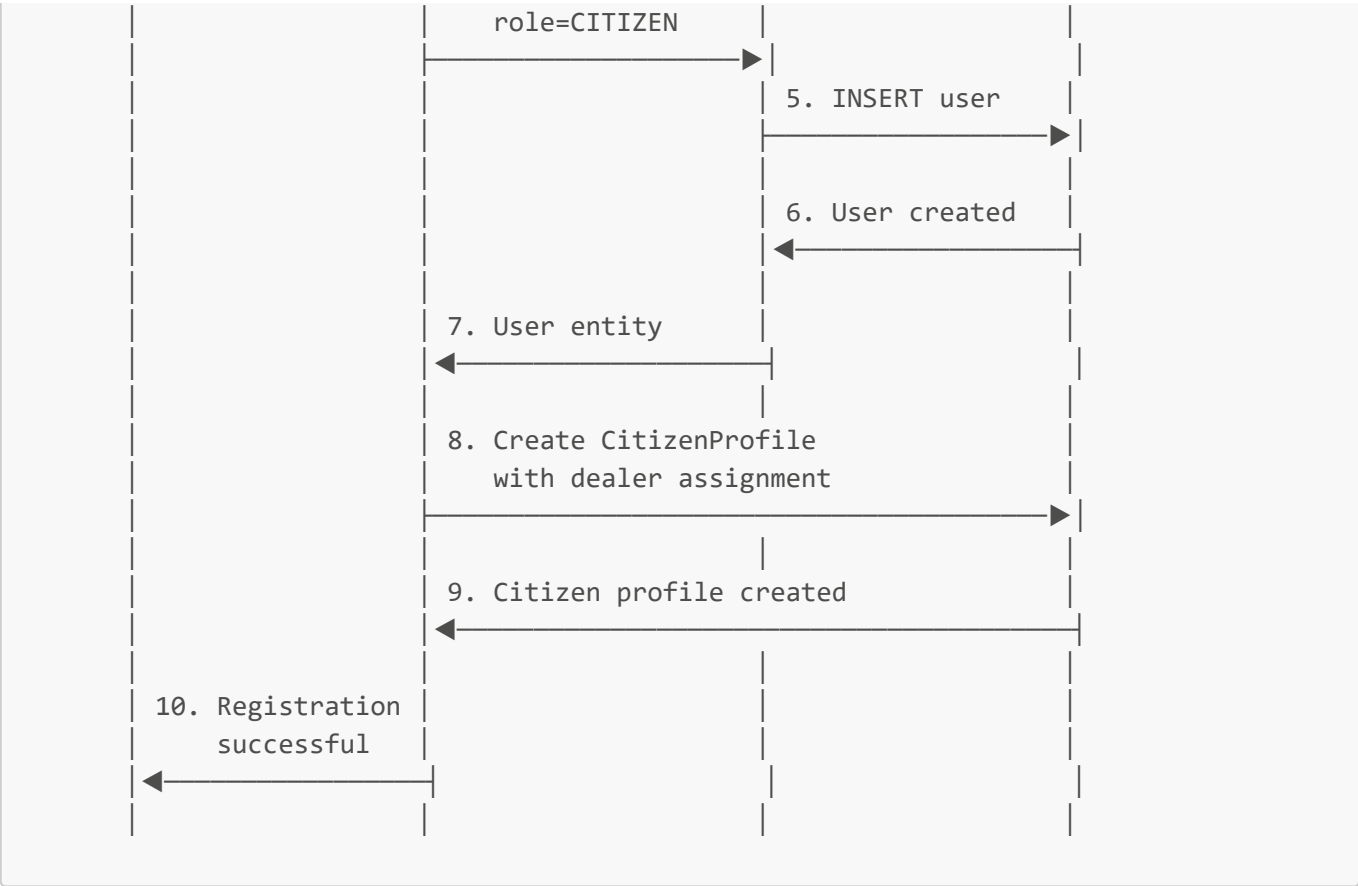
Admin Creates Dealer



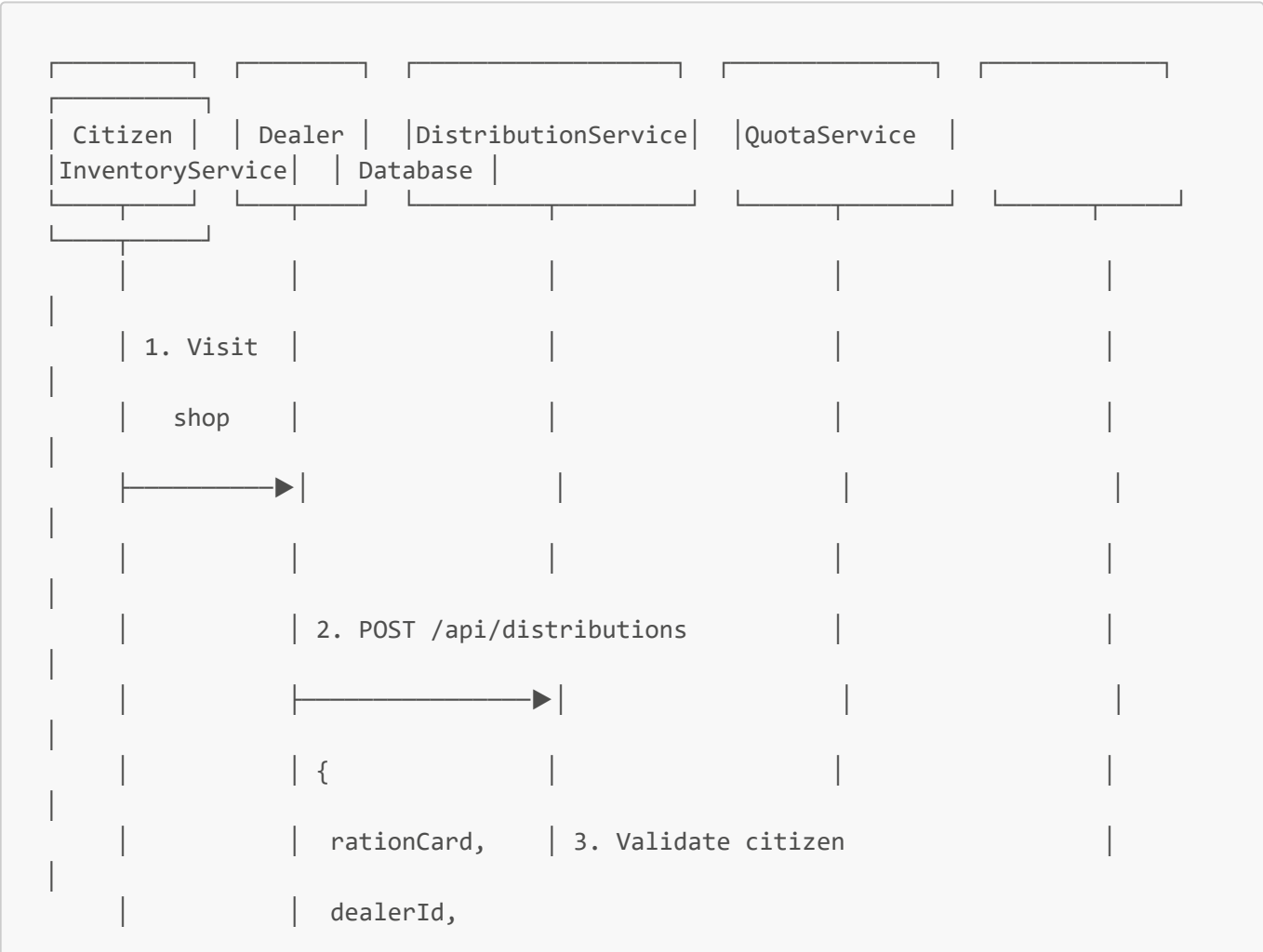


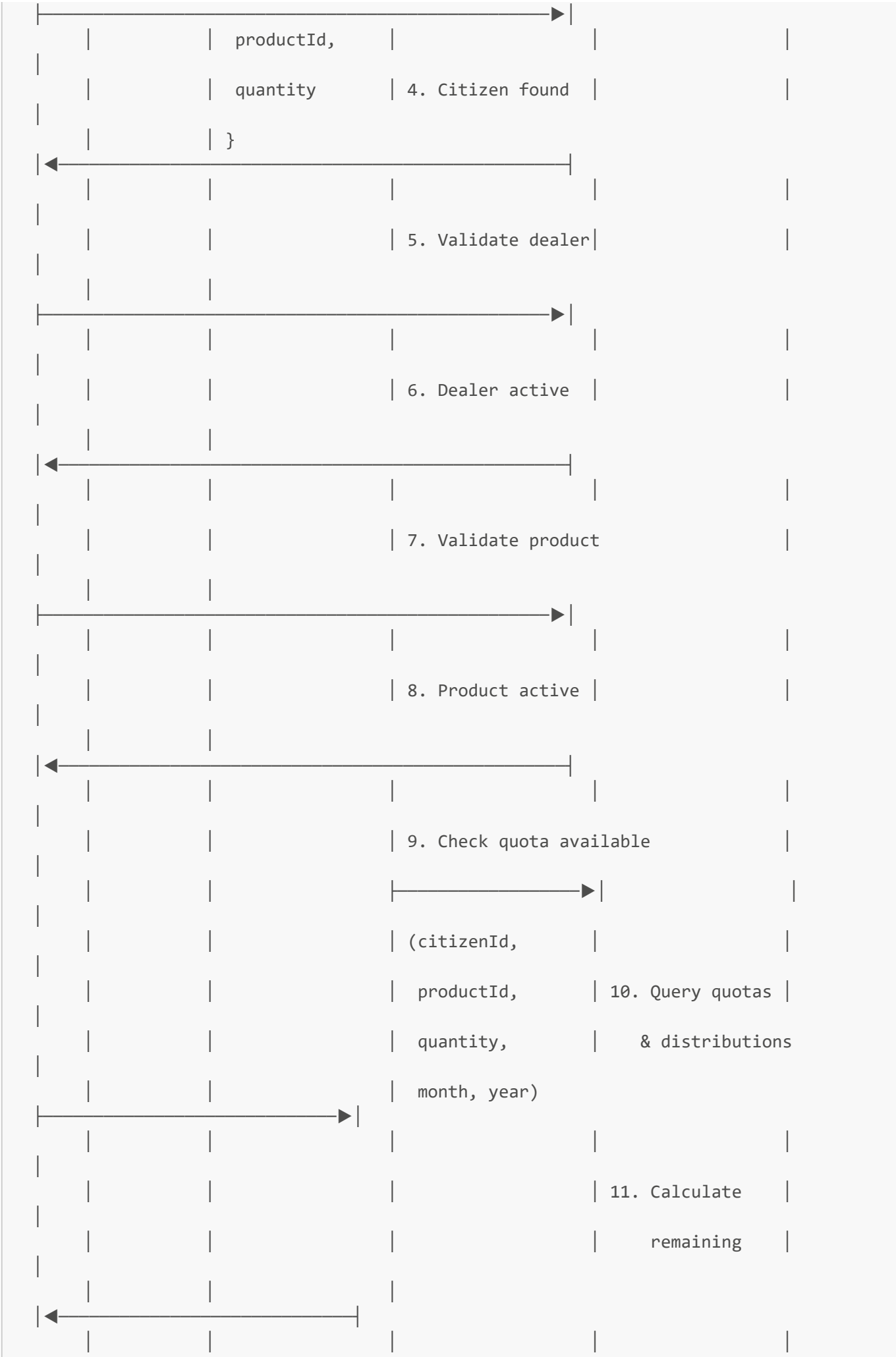
Citizen Self-Registration

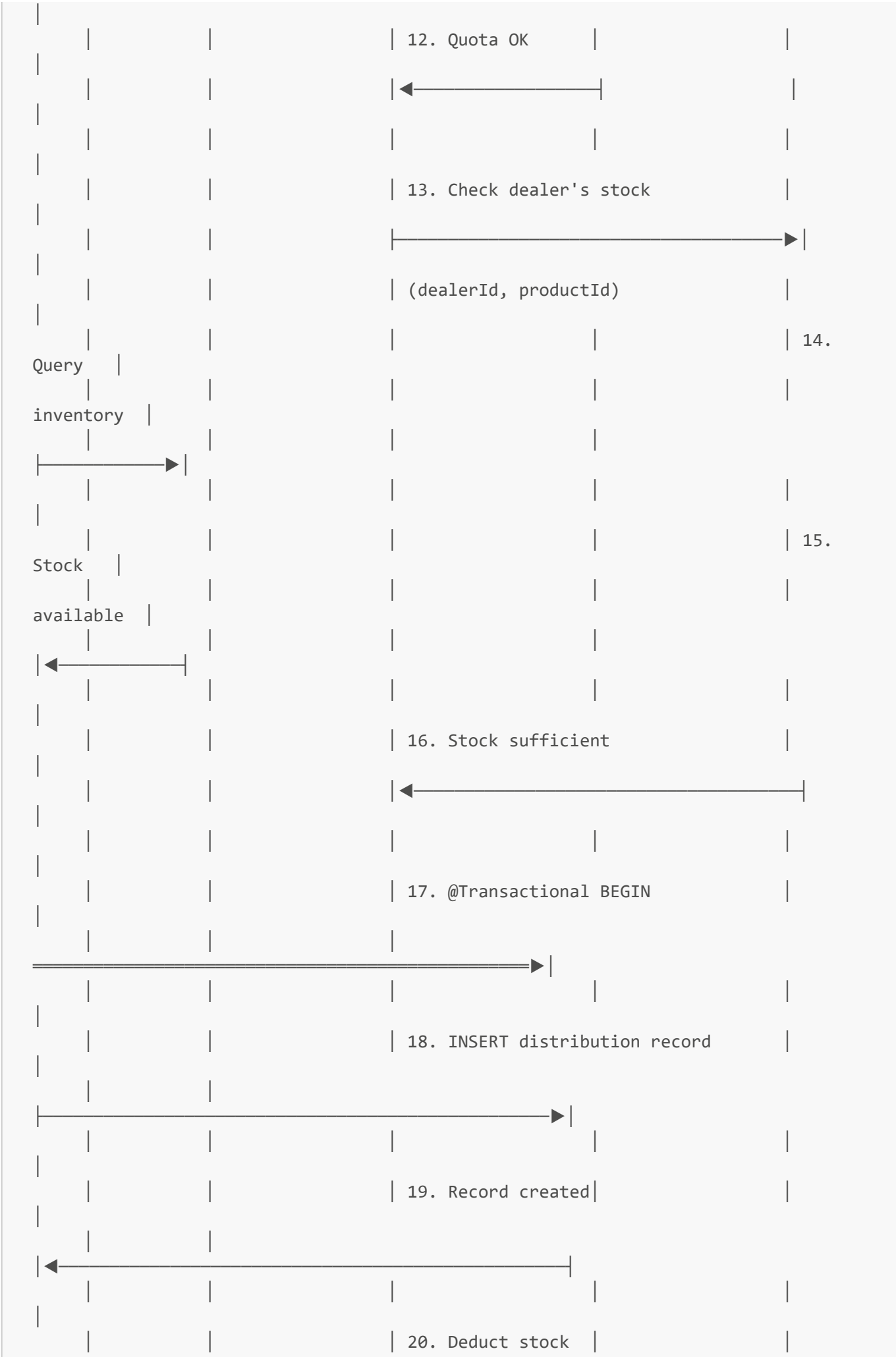


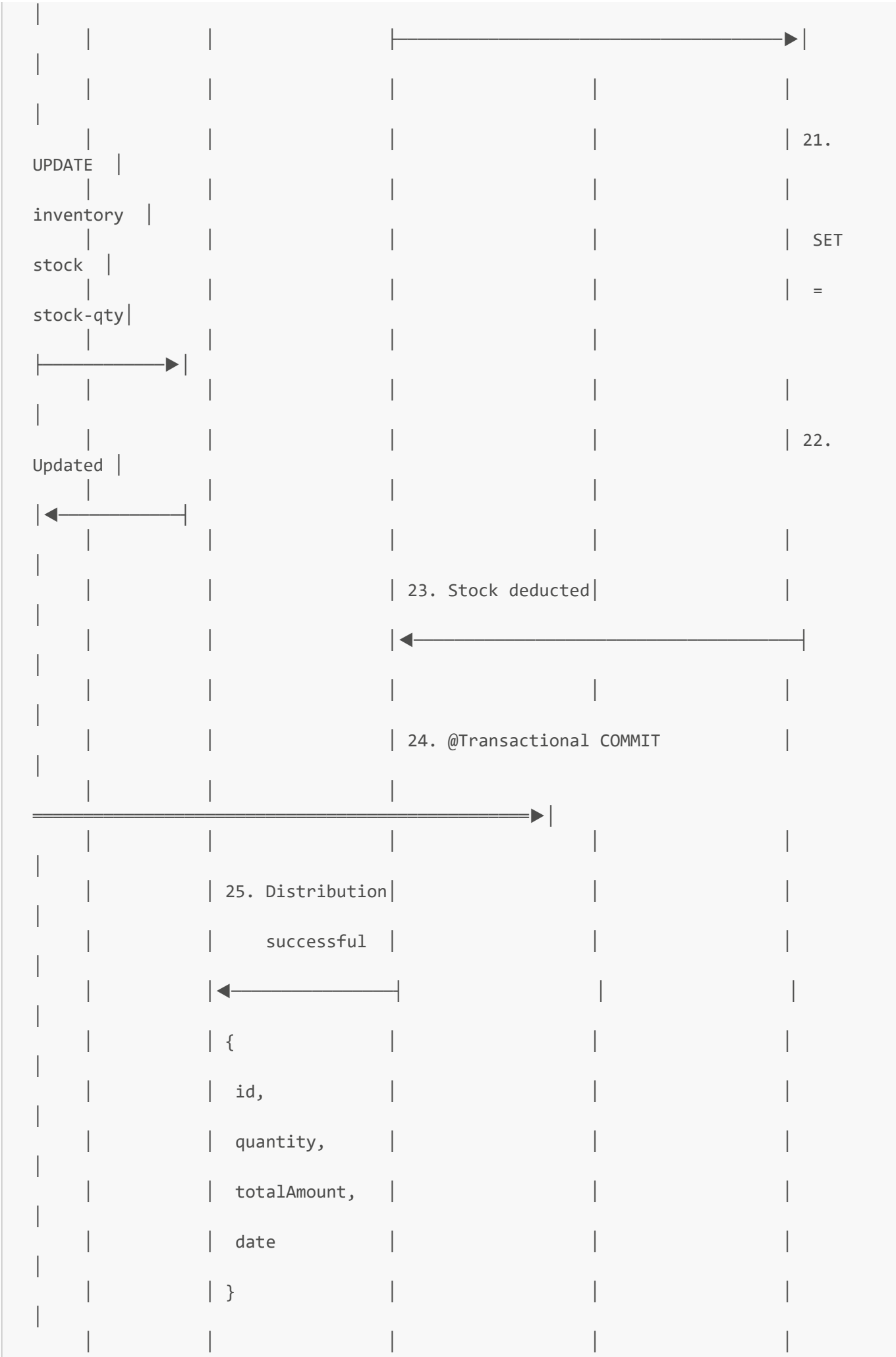


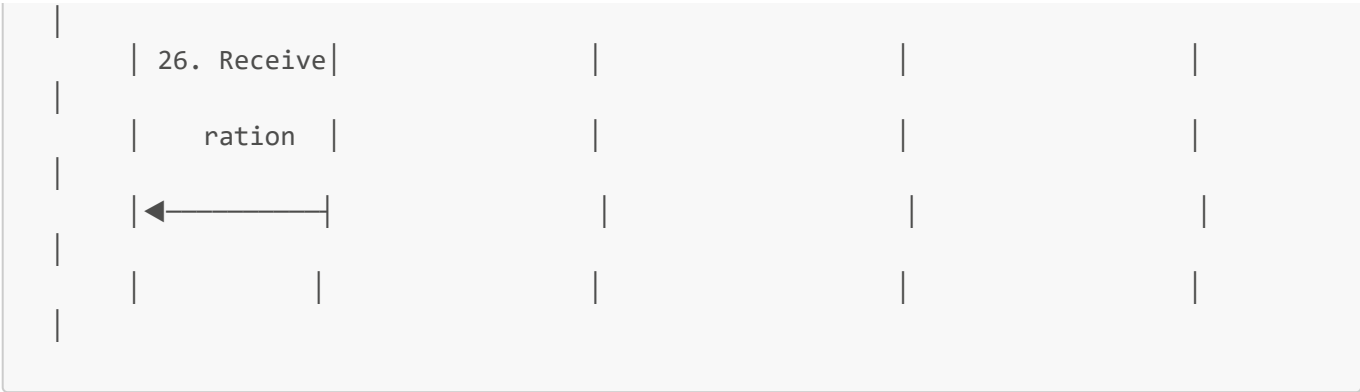
Distribution Flow (Complete Transaction)









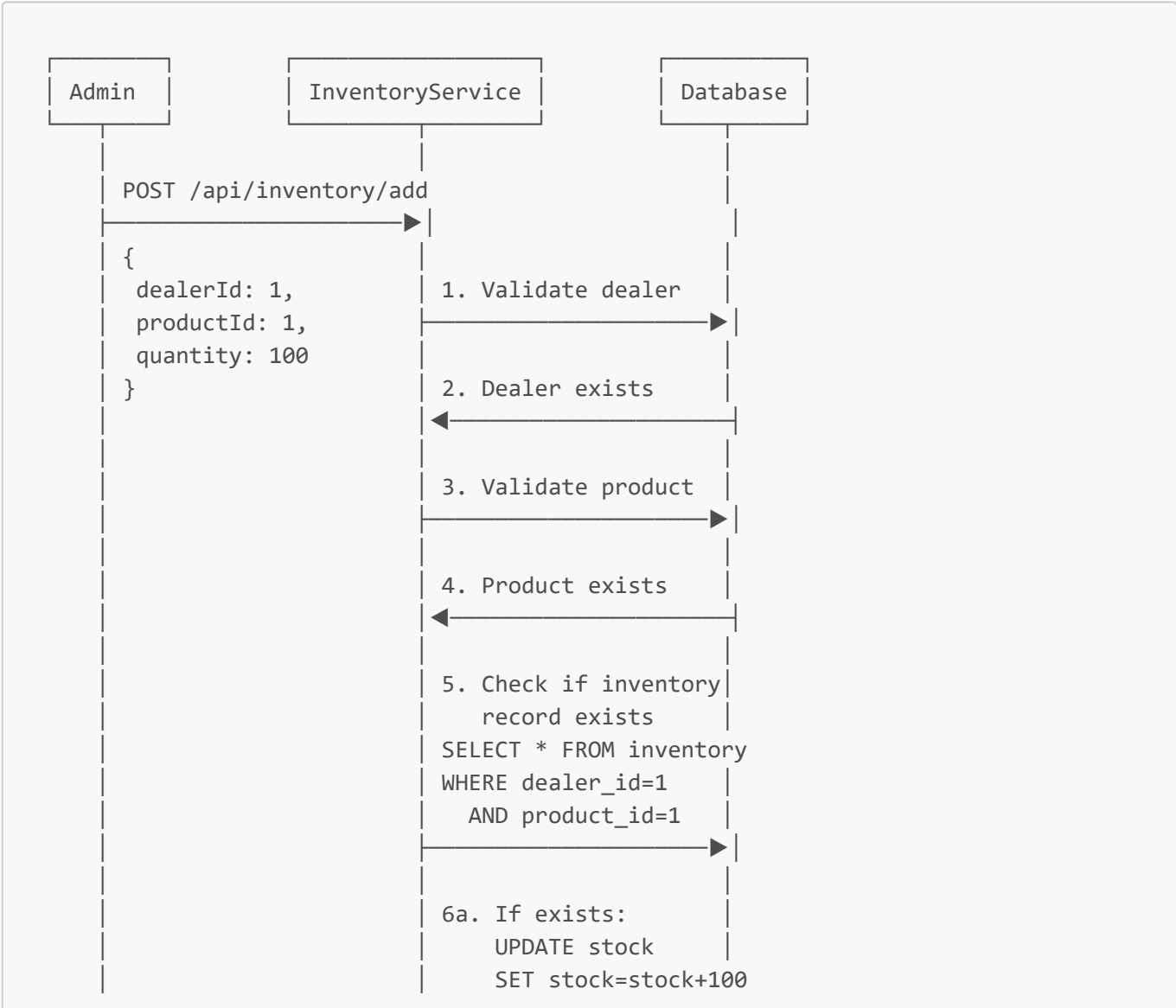


Key Points:

- ☒ All validations happen before transaction
- ☒ Quota check prevents over-distribution
- ☒ Stock deduction atomic with distribution record
- ☒ If any step fails, entire transaction rolls back

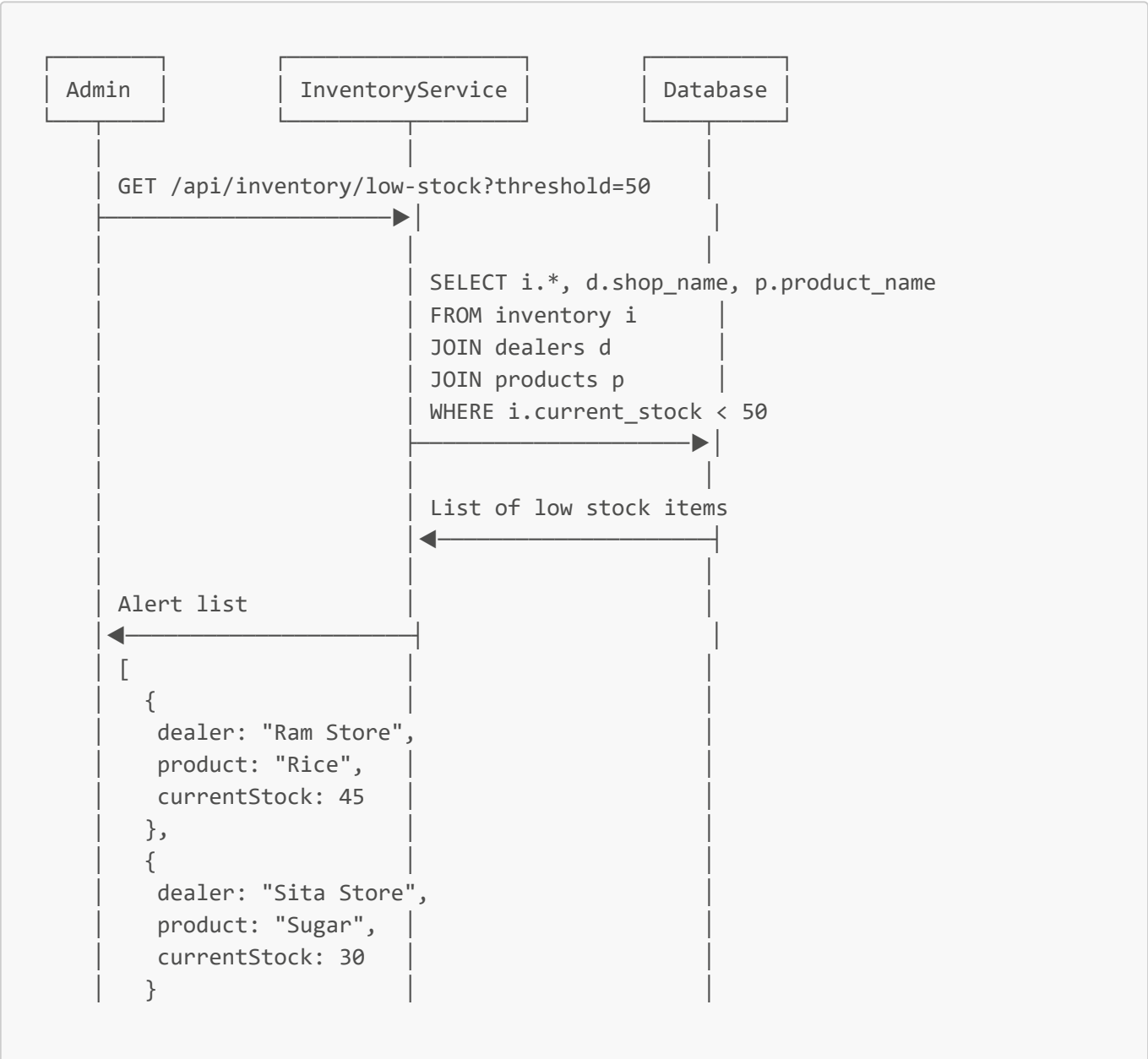
Inventory Management Flow

Admin Allocates Stock to Dealer





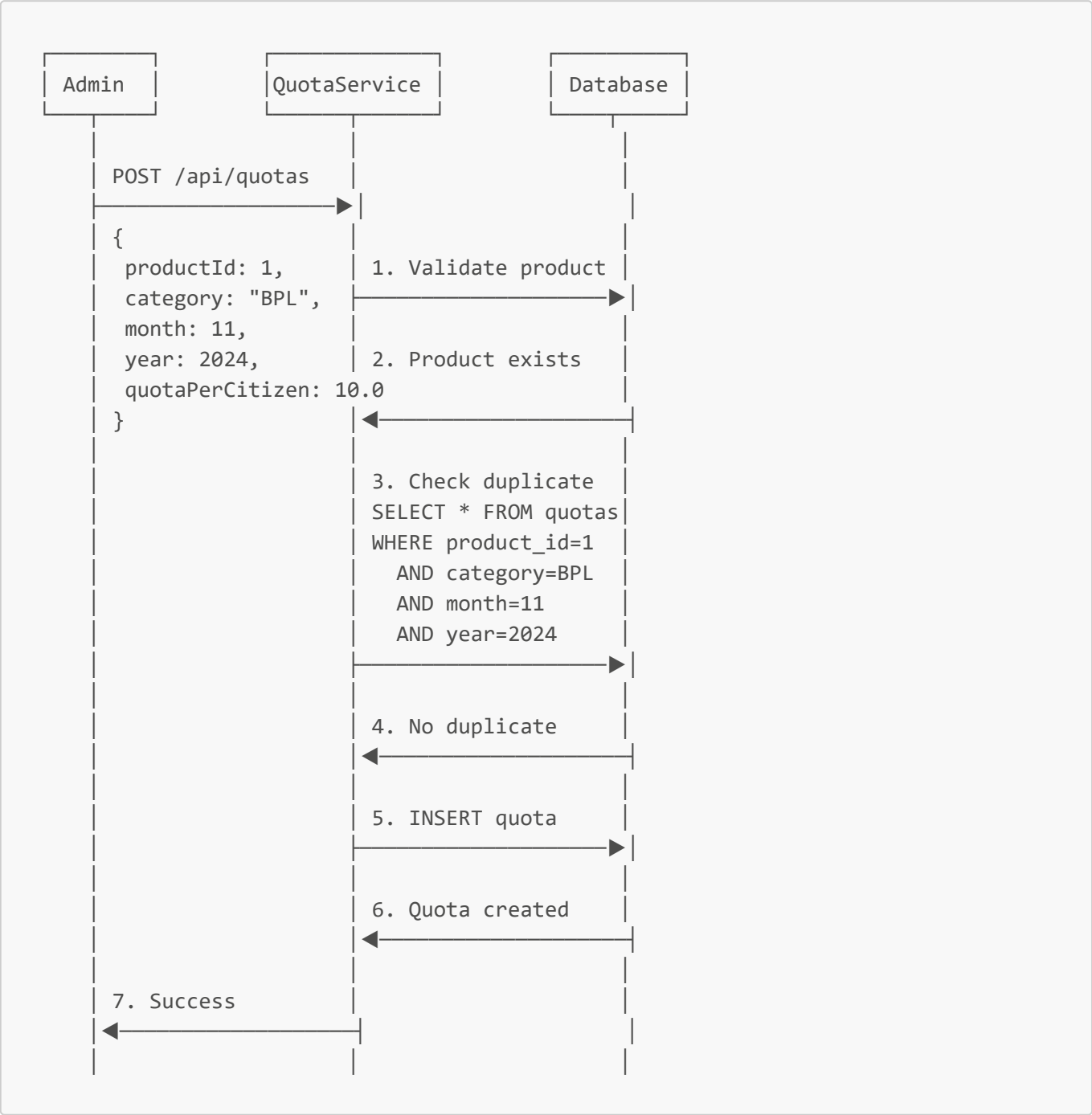
Low Stock Alert Flow



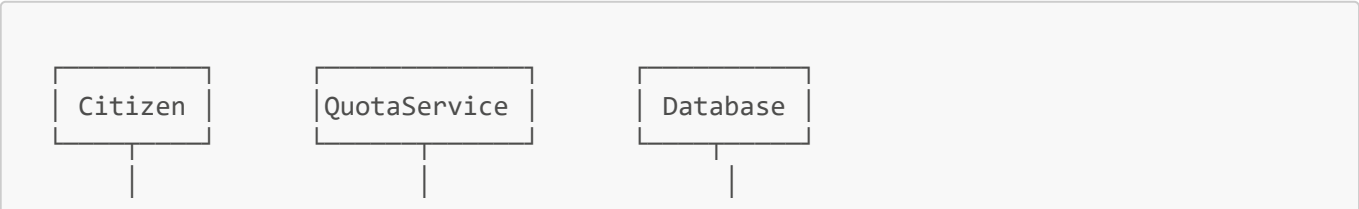
--	--	--

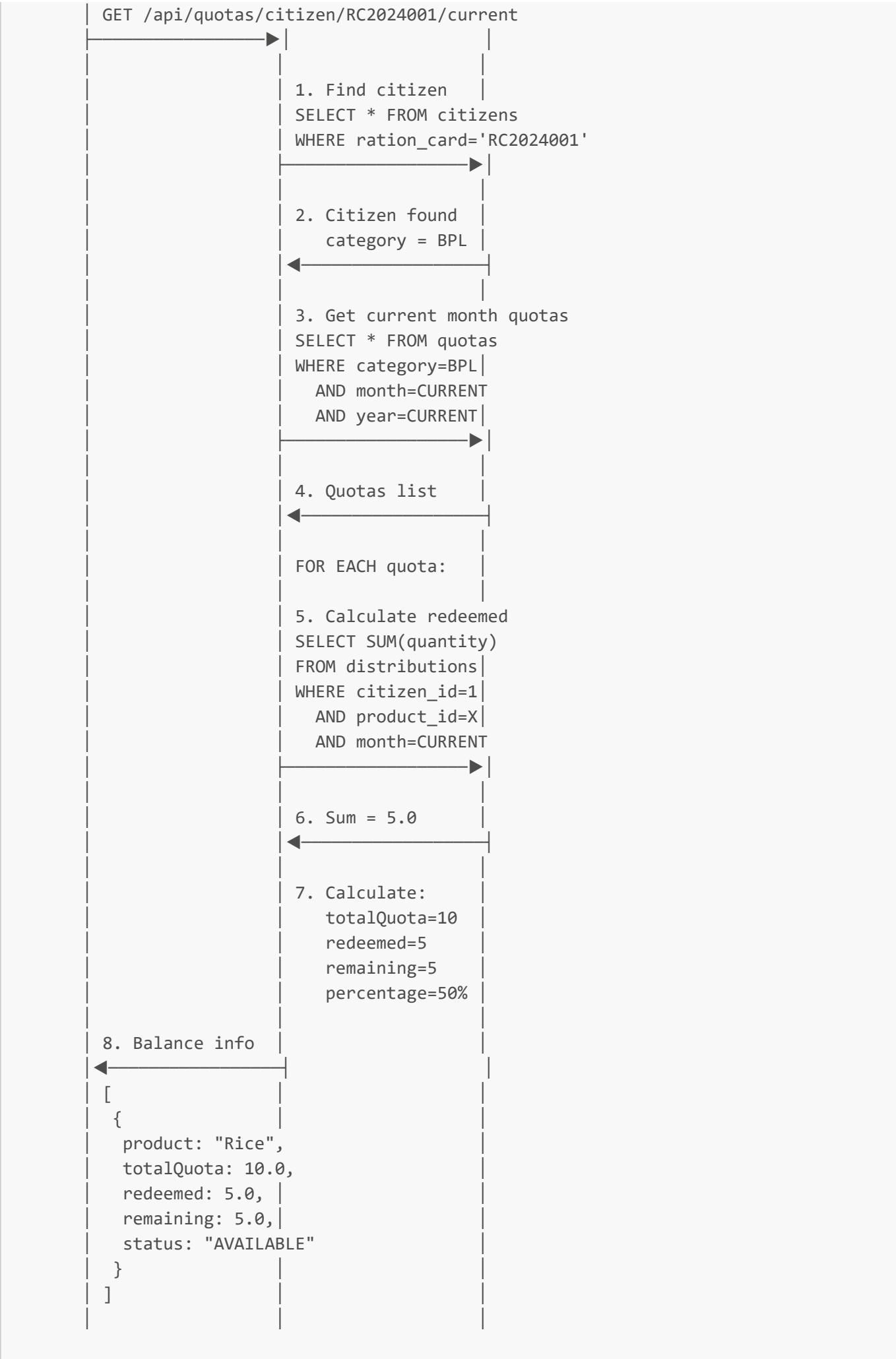
Quota Management Flow

Admin Sets Monthly Quota

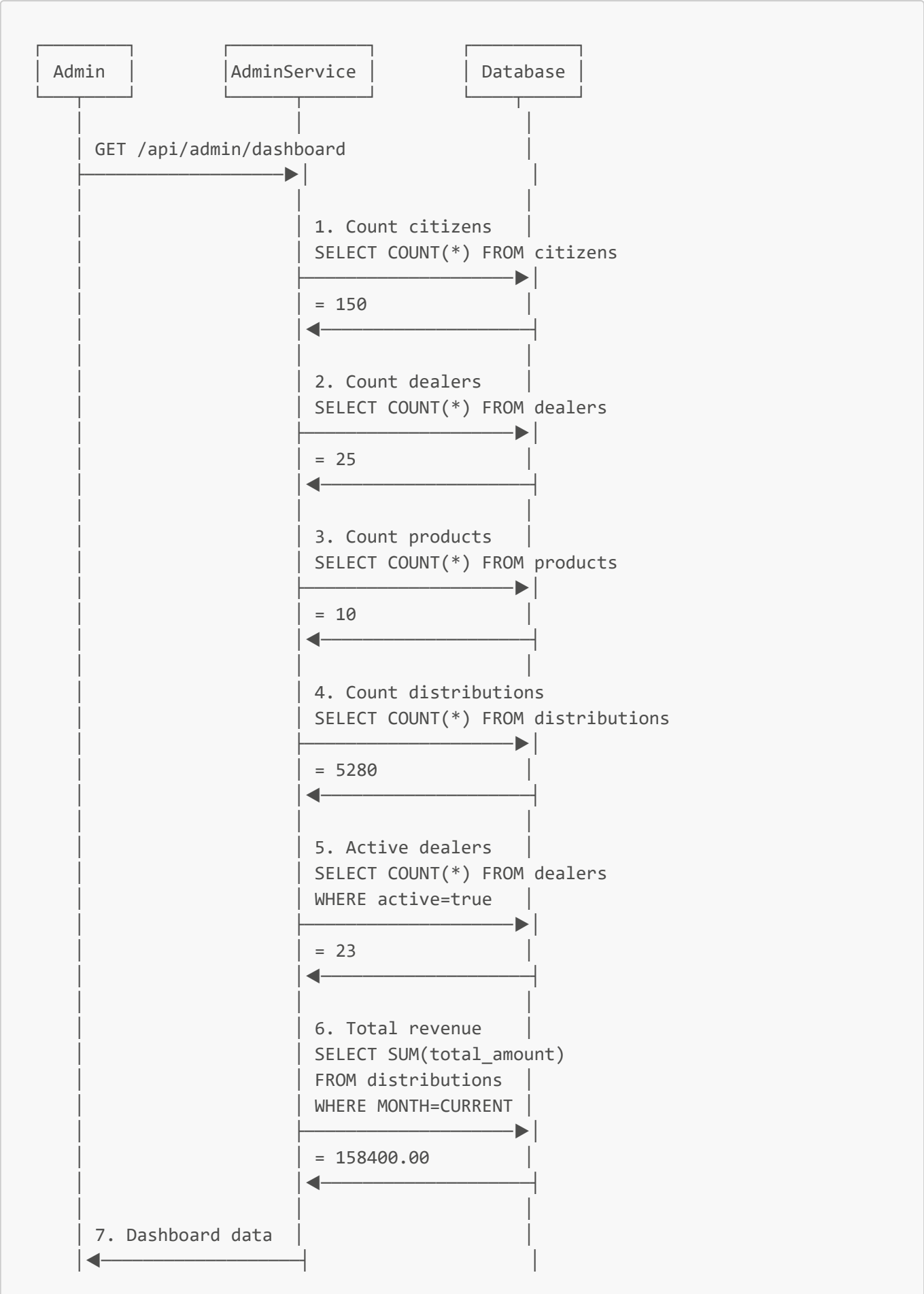


Citizen Checks Quota Balance



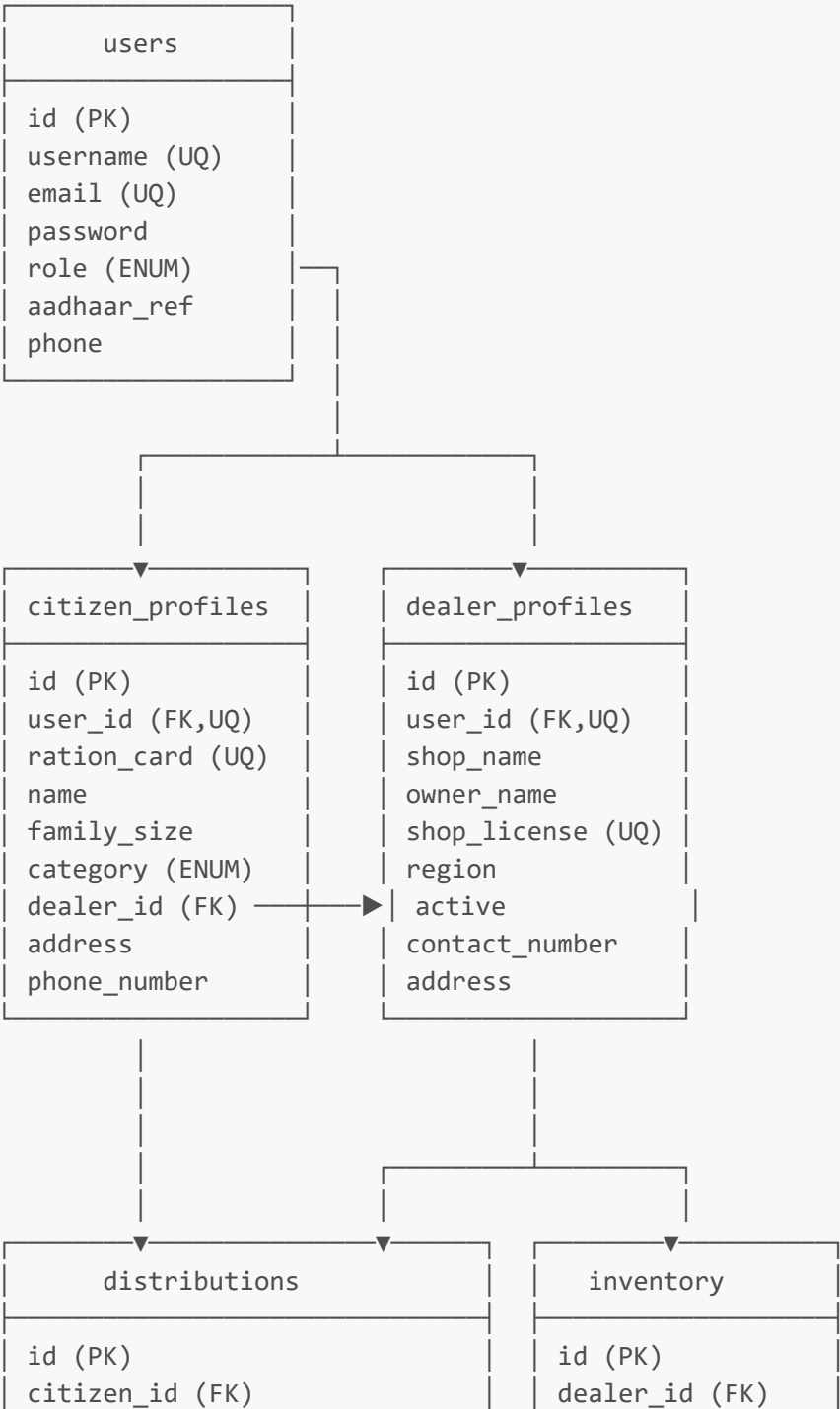


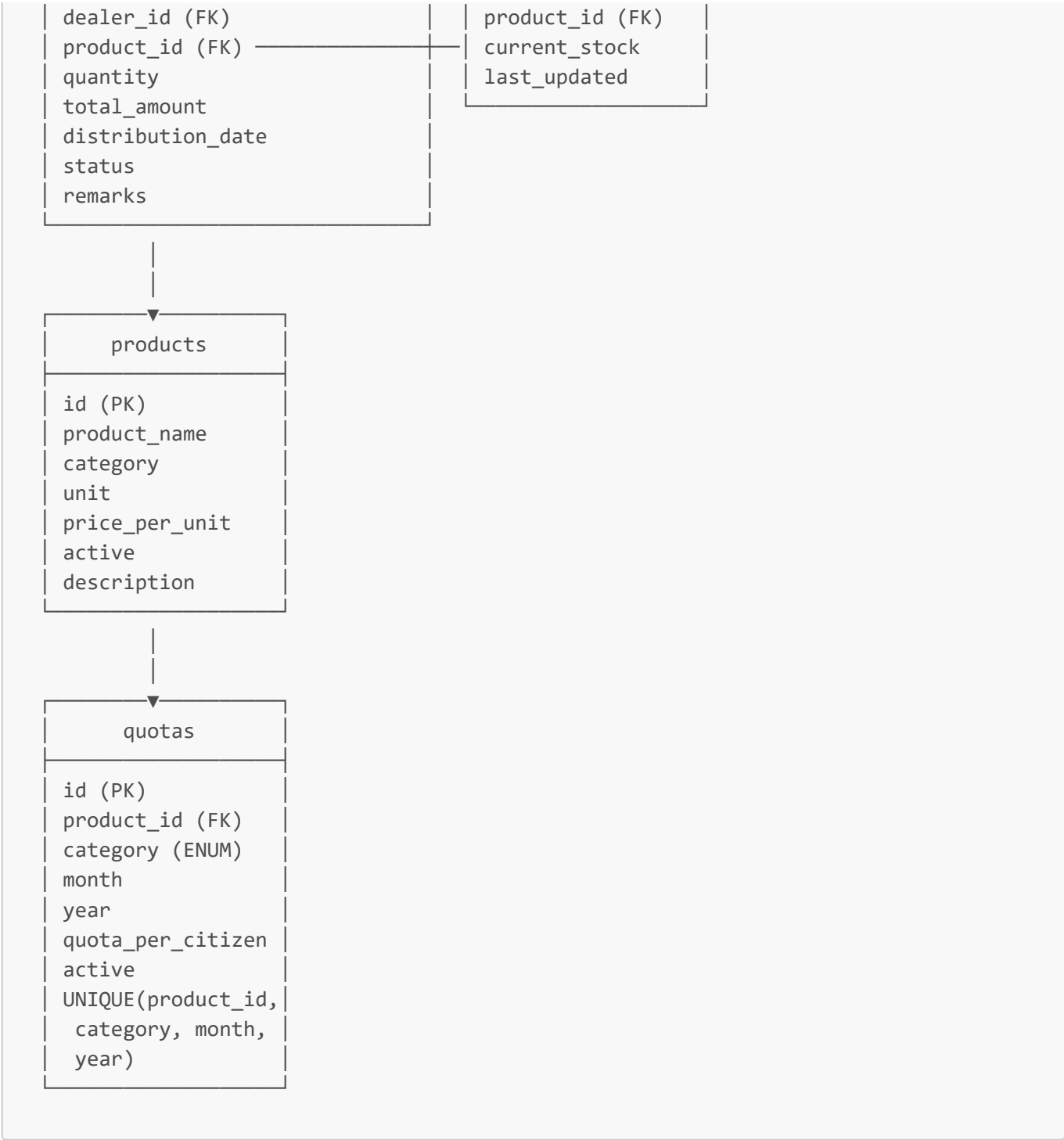
Admin Dashboard Flow



```
{
  totalCitizens: 150,
  totalDealers: 25,
  totalProducts: 10,
  totalDistributions: 5280,
  activeDealers: 23,
  monthlyRevenue: 158400.00
}
```

Database Schema Relationships

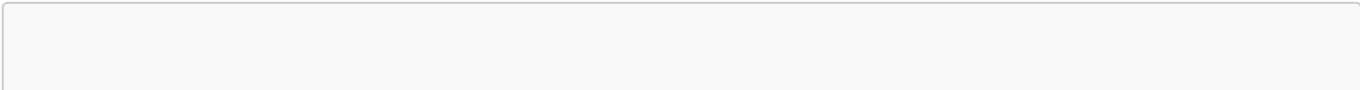


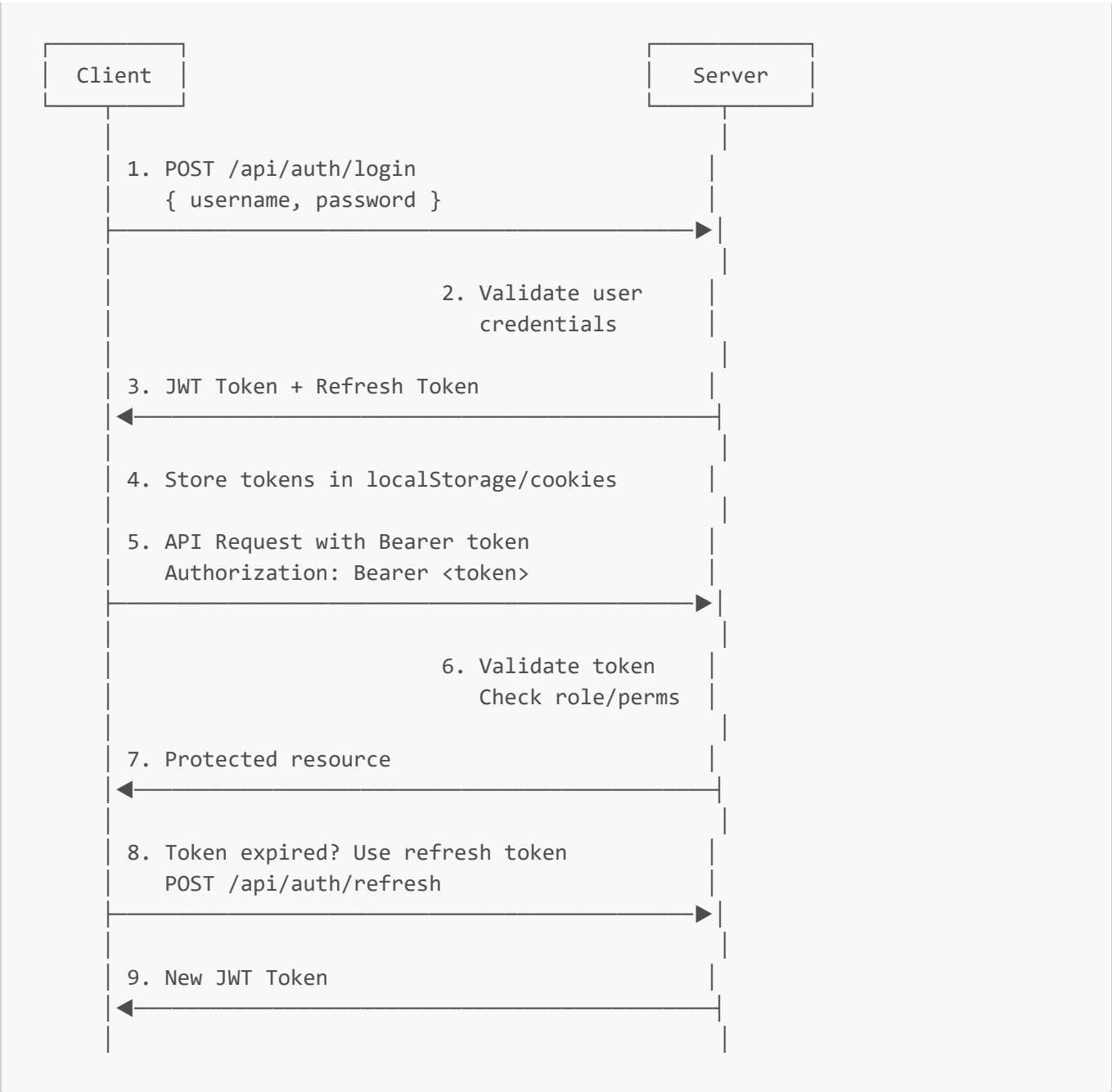


Relationships:

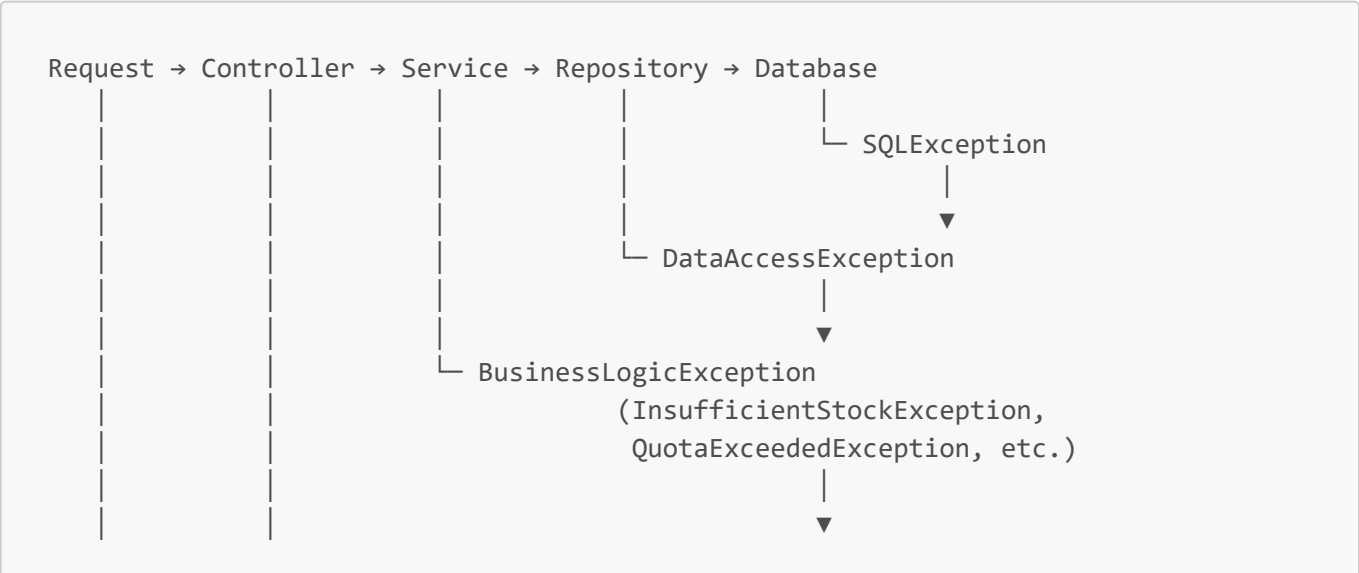
- **1:1** - User ↔ CitizenProfile, User ↔ DealerProfile
- **1:N** - Dealer → Citizens (one dealer serves many citizens)
- **1:N** - Dealer → Inventory (dealer has multiple products)
- **1:N** - Citizen → Distributions (citizen gets multiple distributions)
- **1:N** - Product → Inventory (product stocked by multiple dealers)
- **1:N** - Product → Quotas (product has quotas for BPL/APL)

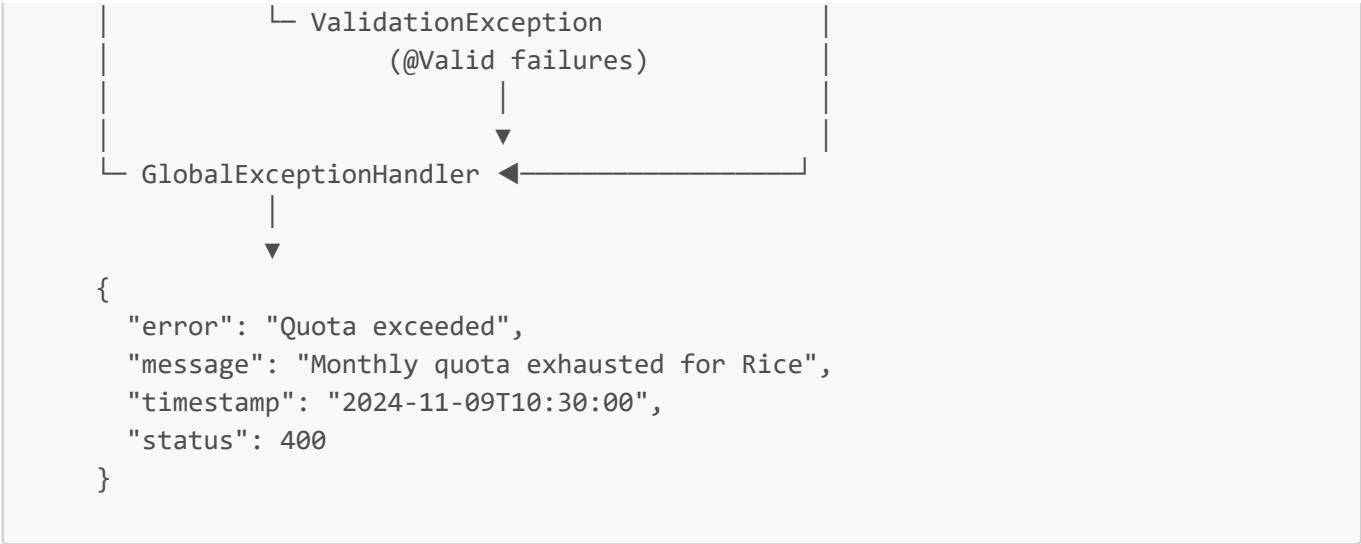
Security Flow (Future Implementation)





Error Handling Flow





Document Version: 1.0
Last Updated: November 2024
Diagrams: 10 comprehensive flow diagrams
Status: ☒ Complete System Documentation