

# Lucky Draw Project Overview

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## Domain Model

### Core Entities

```
classDiagram
    Event "1" *-- "*" EventLocation
    EventLocation "1" *-- "*" Reward
    EventLocation "1" *-- "*" GoldenHour
    Region "1" *-- "*" EventLocation
    Region "1" *-- "*" Province
    Province "1" -- "*" Participant
    Event "1" -- "*" ParticipantEvent
    EventLocation "1" -- "*" ParticipantEvent
    Participant "1" -- "*" ParticipantEvent
    ParticipantEvent "1" -- "*" SpinHistory
    Reward "1" -- "*" SpinHistory
    GoldenHour "1" -- "*" SpinHistory

class Event {
    +String name
    +String code
}
class EventLocation {
    +String name
    +String code
    +Integer maxCapacity
    +Double defaultWinProbability
    +LocalDateTime startTime
    +LocalDateTime endTime
}
class Reward {
    +String name
    +String code
    +BigDecimal value
    +Integer quantity
    +Double winProbability
}
class GoldenHour {
    +LocalDateTime startTime
    +LocalDateTime endTime
    +BigDecimal multiplier
}
class Region {
    +String name
    +String code
}
class Province {
    +String name
```

```
        +String code
    }
    class Participant {
        +String name
        +String code
        +String phone
        +String email
    }
    class ParticipantEvent {
        +Integer spinsRemaining
    }
    class SpinHistory {
        +LocalDateTime spinTime
    }
```

## Support Entities

```
classDiagram
    User "*" -- "*" Role
    User "1" -- "*" BlacklistedToken

    class User {
        +String username
        +String password
        +String email
        +String fullName
    }
    class Role {
        +String name
        +String code
        +String description
        +Integer displayOrder
    }
    class BlacklistedToken {
        +String token
        +LocalDateTime expiryDate
    }
```

## Event

- Represents a lucky draw event
- Has start and end times
- Contains multiple locations
- Defines maximum participants and spins per participant
- Manages participant registrations

## EventLocation

- Physical location where an event takes place

- Belongs to a region
- Has maximum capacity
- Has default win probability
- Contains rewards and golden hours
- Manages daily spin limits

### **Reward**

- Prize that can be won in a location
- Has value and quantity
- Belongs to an event location
- Has win probability
- Manages inventory

### **GoldenHour**

- Special time period in a location with multiplied rewards
- Has start and end times
- Belongs to an event location
- Defines reward multiplier

### **Region**

- Geographic region (e.g., North, South)
- Contains provinces
- Manages event locations

### **Province**

- Administrative province
- Belongs to a region
- Used for participant registration

### **Participant**

- Person participating in events
- Has basic profile information
- From a province
- Can join multiple events

### **ParticipantEvent**

- Links participant to event and location
- Tracks remaining spins
- Records spin history

### **SpinHistory**

- Records spin attempts
- Links to reward if won
- Tracks golden hour multipliers
- Belongs to participant event

## Support Entities

### User

- System user (admin, staff)
- Has roles and permissions
- Manages events and locations

### Role

- User role definition
- Contains permissions
- Used for access control

### BlacklistedToken

- Tracks invalidated JWT tokens
- Used for session management

## Key Features

### 1. Event Management

- Create and manage events
- Configure locations and rewards
- Set golden hours
- Monitor participation

### 2. Participant Registration

- Register participants
- Validate eligibility
- Track participation

### 3. Spin Management

- Process spin attempts
- Apply golden hour multipliers
- Track reward inventory
- Manage location capacity

### 4. Reward Management

- Configure rewards by location
- Track inventory

- Set win probabilities

## 5. Access Control

- User authentication
- Role-based permissions
- Token management

## Technical Stack

- Java 17
- Spring Boot 3
- Spring Security with JWT
- Spring Data JPA
- PostgreSQL
- Gradle
- JUnit 5