MongoDB Data Modelling: Feedback System

# What Is Data Modelling?

In MongoDB, data modeling involves structuring collections and documents to meet the application's performance and functional requirements. For this example, we model a Feedback System that stores user reviews and ratings for food.

# Project Context: Feedback App – FoodieFeedback

This app collects user feedback for food items in a restaurant setting.

## 1. Identify Collections

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| --- | --- |
| Collection | Purpose |
| users | Stores details of users giving feedback |
| menu\_items | Stores details of food items available |
| feedback | Stores ratings and comments by users on menu items |

## 2. Define Relationships

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| # | Relationship | Type | Description | Field Reference | Modeling Approach |
| 1 | User ↔ Feedback | One-to-Many | Each user can leave multiple feedback entries. | feedback.userId → users.\_id | 🔗 Reference |
| 2 | Menu Item ↔ Feedback | One-to-Many | Each food item can have multiple feedback entries. | feedback.itemId → menu\_items.\_id | 🔗 Reference |

## 3. Embed vs Reference

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| --- | --- |
| Use Case | Recommended Modeling |
| User feedback on food | Reference userId and itemId |
| Detailed comments with rating | Embed in feedback collection |

## 4. Sample Schemas

a. users

{  
 "\_id": ObjectId("..."),  
 "name": "John Doe",  
 "email": "john@example.com",  
 "createdAt": ISODate("2025-07-01T10:00:00Z"),  
 "updatedAt": ISODate("2025-07-08T15:00:00Z")  
}

b. menu\_items

{  
 "\_id": ObjectId("..."),  
 "name": "Paneer Butter Masala",  
 "price": 220,  
 "category": "Indian",  
 "createdAt": ISODate("2025-07-01T10:00:00Z"),  
 "updatedAt": ISODate("2025-07-08T15:00:00Z")  
}

c. feedback

{  
 "\_id": ObjectId("..."),  
 "userId": ObjectId("..."),  
 "itemId": ObjectId("..."),  
 "food\_rating": 5,  
 "comment": "Delicious and creamy!",  
 "createdAt": ISODate("2025-07-09T12:00:00Z"),  
 "updatedAt": ISODate("2025-07-09T12:10:00Z")  
}

## 5. Query Scenarios to Think About

|  |  |
| --- | --- |
| Scenario | Fields to Use |
| Show all feedback by a user | Filter feedback by userId |
| Show all feedback for a menu item | Filter feedback by itemId |
| Get average rating for a food item | Aggregate food\_rating grouped by itemId |
| Get top-rated items | Aggregate and sort food\_rating ≥ 4 |
| Get all user comments | Project comment field in feedback |