MongoDB Data Modeling Document

# Introduction

This document outlines the data modeling strategy for the Smart Event Management Platform using MongoDB. The database is designed to handle various entities involved in organizing and managing events such as guests, budgets, tasks, themes, feedback, vendors, and more.

# List of Collections

1. events  
2. themes  
3. guests  
4. feedback  
5. budget  
6. expenses  
7. notifications  
8. tasks  
9. vendors  
10. collaborators  
11. usersQRScans

# Data Modeling Strategy

The data modeling in this project uses a mix of embedding and referencing depending on the relationships and query patterns.

## Embedding

Embedding is used when data is tightly coupled and frequently accessed together. For instance:  
- categoryAllocations are embedded inside the budget collection.  
- RSVP status, guest type, and QR code data are embedded within each guest document.

## Referencing

Referencing is used when documents are large, or when the data is shared across multiple entities. Examples:  
- eventId is used as a reference key in collections such as guests, feedback, budget, and tasks.  
- Collaborators reference events via eventId.  
- Vendors and tasks reference eventId and role, instead of embedding detailed event info repeatedly.

# Relationship Summary

- One-to-Many: An event has many guests, feedback entries, tasks, and vendors.  
- One-to-One: Budget document per event.  
- Many-to-Many (emulated via referencing): Collaborators may work on multiple events.

# Data Model Diagram (Placeholder)

A visual ER-style diagram can be added here showing relationships via eventId, and key embedded fields.