### **Title: MongoDB – Data Modeling (Travel App)**

### **What is Data Modeling?**

In MongoDB, data modeling is the process of organizing your collections and documents in a way that reflects real-world entities, user interactions, and supports performant queries.

This travel app is designed for users to share travel entries, complete challenges, and explore global destinations.

### **Core Collections and Purpose**

| **Collection** | **Description** |
| --- | --- |
| users | Stores traveler profiles, stats (countries visited, entries), and challenge status |
| challenges | Platform-issued challenges like “Visit 10 Countries”, “Culinary Explorer” |
| entries | Travel logs with title, description, media, mood, tags, and geolocation |

### **🔗 Key Relationships**

| **Relationship** | **Type** | **Description** | **Approach** |
| --- | --- | --- | --- |
| user ↔ entries | One-to-Many | A user can post many travel entries | Reference userId in entries |
| user ↔ challenges | Many-to-Many | Users can participate and complete multiple challenges | Embed challenge progress in users; also keep a global challenges list |
| challenge ↔ users | Many-to-Many | A challenge tracks who participated and who achieved it | Store participants[] and achievedBy[] in challenges |

### 

### **Modeling Decisions**

| **Use Case** | **Model As** | **Justification** |
| --- | --- | --- |
| Track posts per user | Reference | Entries can be large and grow over time |
| Challenge progress per user | Embed | Keeps user profile and progress together |
| Track challenge participation | Reference | Needed to aggregate completion stats |
| Store travel media in posts | Embed | Usually small, belongs tightly to entry |

### **Sample Schema: users**

json

CopyEdit

{

"\_id": ObjectId("..."),

"username": "Hema",

"email": "hema@example.com",

"isPrivate": false,

"travelStats": {

"countriesVisited": 20,

"entriesCreated": 34

},

"challenges": [

{

"challengeId": ObjectId("..."),

"title": "Visit 10 Countries",

"status": "Completed",

"progress": 10

}

]

}