MongoDB Data Modeling – Adventure Planner Platform

This document describes the MongoDB data model used in the Adventure Planner Platform project. The database was modeled to support an adventure booking system with users, available adventures, bookings, and reviews.

# Collections

## Users

* Stores user details such as name, email, phone, and role (traveler/admin).
* Key Fields: \_id, name, email, phone, role

## Adventures

* Contains details of available adventure activities.
* Key Fields: \_id, title, location, difficulty, price, duration, availableDates

## Bookings

* Links users to adventures with booking date and status.
* Key Fields: \_id, userId (ref), adventureId (ref), date, status

## Reviews

* User feedback and ratings for completed adventures.
* Key Fields: \_id, userId (ref), adventureId (ref), rating, comment

# Data Modeling Strategy

We followed a hybrid approach using both referencing and embedding where appropriate:

• Referencing was used between Bookings/Reviews and Users/Adventures to maintain normalization and avoid data duplication.

• Embedding would be inefficient for this use-case due to the dynamic and potentially large number of bookings/reviews per user.

## Embedding vs Referencing

• Embedding is ideal for contained, one-to-few relationships (e.g., address inside user).

• Referencing is used for one-to-many or many-to-many, such as users booking multiple adventures or reviewing many.