

Database Design

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07/16/2023

**OVERVIEW**

For the FitAll capstone project, MongoDB will be used as the chosen document-based data store. This decision is based on the nature of the web application, where there is no requirement for complex relationships between collections. Each entity will be self-sufficient, containing all the necessary information for rendering data in the web pages. Two Boolean flags will be utilized to avoid data replication. Additionally, the availability of free cloud hosting for MongoDB makes it a favorable choice.

**Data Specifications**

For the FitAll data collection, we will utilize MongoDB as the document-based data store without the need for forming complex relationships between collections.

**Members Collection**

In the FitAll web application, the collection named "members" will store essential information about the members. Although the collection is named "members," it is important to note that it refers to the users who are the primary users of the application. This naming choice was made to align with the terminology commonly used in web applications. The "members" collection will store comprehensive data about each member, including details such as their name, email, phone number, and address.

Document Structure

{

"\_id": string (auto-generated ID by MongoDB),

"age": int,

"gender": string,

"height": float,

"weight": float,

"goal": string,

"image": string (reference URL to the cloud-stored image),

"contact": {

"name": string,

"email": string,

"phone": string,

"address": string

}

}

**Trainer Collection**

This collection will be used to collect information about our trainers, including details such as their name, email, phone number, address, specialization.

{

"\_id": string (auto-generated ID by MongoDB),

"name": string,

"email": string,

"phone": string,

"specialization": string,

"image": string (reference URL to the cloud-stored image),

"available": boolean

}

**Workouts Collection**

The "workout" collection in the FitAll web application will serve as a repository for all workout-related data. It is designed to store information about various exercises, routines, and workout sessions.

{

"\_id": string (auto-generated ID by MongoDB),

"title": string,

"description": string,

"duration": int,

"level": string,

"image": string (reference URL to the cloud-stored image),

"isPending": boolean,

"approvedOn": string,

"approvedBy": string

}

**Progress Collection**

The "progress" collection in the FitAll web application is designed to track and store users' fitness progress over time. It serves as a repository for recording various measurements and metrics related to users' health and fitness journeys.

{

"\_id": string (auto-generated ID by MongoDB),

"memberId": string (reference to the member's \_id),

"date": string,

"weight": float,

"bodyFat": float

}

**Purpose, Implementation and interactions**

Members:

* Purpose: The members collection is essential for the FitAll application as it revolves around managing member information.
* Implementation: Members' data will be stored in the collection, including age, gender, height, weight, goal, image, and contact details.
* Interaction: Trainers and admin users can access member information for personalized training plans and communication. Members can also view and update their own profile details.

Trainers:

* Purpose: The trainer collection stores information about fitness trainers associated with the FitAll application.
* Implementation: Trainer data will include name, email, phone number, specialization, image, and availability.
* Interaction: Members can view trainer profiles and choose trainers for their fitness journey. Admin users can manage trainer information and availability.

Workouts:

* Purpose: The workouts collection provides a repository of workout plans available to FitAll members.
* Implementation: Each workout document will include a title, description, duration, level, image, and flags for pending status and approvals.
* Interaction: Members can browse and select workouts suitable for their fitness goals. Admin users can manage and approve workout plans.

Progress:

* Purpose: The progress collection allows members to track their fitness progress over time.
* Implementation: Progress documents will contain member ID references, date, weight, and body fat measurements.
* Interaction: Members can log and view their progress data to track their fitness journey. Trainers and admin users can monitor members' progress for personalized guidance.