TOPIC **- QUIZ WEB APPLICATION**
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Quiz Web App

Introduction

The Quiz Web App is a dynamic platform designed to facilitate quiz creation, participation, and management. Utilizing React.js, Express.js, MongoDB, and Docker, the app offers a seamless experience for users to engage with quizzes in various categories. The application supports a range of functionalities including public and private quizzes, personal profile management, and a competitive leaderboard. This report details the app's features, with a specific focus on the new private join ID feature that enhances quiz privacy and access control.

Technologies

1. ReactJs
2. NodeJs
3. MongoDB
4. Docker

Overview

The Quiz Web App is built to serve users who are interested in testing and expanding their knowledge through interactive quizzes. Users can take part in public quizzes, create quizzes for others to enjoy, and manage their quiz-related activities through a personal profile. The newly added private join ID feature allows quiz creators to restrict access to their quizzes, making them available only to users with a specific join code. This feature ensures a higher level of control over quiz access and participation.

Brief Description

The Quiz Web App includes:

- **Public Quizzes:** Accessible to all users and visible on the dashboard.
- **Private Quizzes:** Accessible only through a unique 8-digit join ID, not displayed on the dashboard.
- **Profile Management:** Users can view their created and attended quizzes, including private join IDs.
- **Leaderboard:** Ranks users based on total scores achieved in quizzes.

Purpose

The purpose of the Quiz Web App is to:

- Provide an engaging platform for users to take and create quizzes.
- Allow users to restrict access to certain quizzes through private join IDs.
- Offer a comprehensive view of user quiz activities and performance.
- Facilitate competitive engagement through a leaderboard system.

Project Scope

The project includes the following key aspects:

- **User Authentication:** Secure user registration and login.
- **Quiz Participation:** Access to both public and private quizzes.
- **Quiz Creation:** Creation of both public and private quizzes with join ID functionality.
- **Profile Management:** Viewing and managing quizzes, including private join IDs.
- **Leaderboard:** Displaying user rankings based on quiz scores.

Boundary of Project

- **Mobile Application Development:** Not included; focus is on the web application.
- **Quiz Creation through AI :** Currently users need to manually type questions and answers. Need an option for generating a quiz by giving a Topic.
- **Offline Functionality:** The app requires an internet connection for all features.

Key Features and Functionalities

- **User Authentication:** Registration, login, and account management.
- **Quiz Participation:** Engage with public and private quizzes.
- **Quiz Creation:** Create and manage public or private quizzes, with an option for a join ID.

- **Profile Management:** View and manage quizzes, including access codes for private quizzes.
- **Leaderboard:** View user rankings based on total quiz scores.

Functional Requirements

1. **User Authentication:**
   - Users must be able to register, log in, and manage their accounts securely.

2. **Quiz Participation:**
   - Users can browse and take public quizzes directly.
   - For private quizzes, users need to enter an 8-digit join ID to gain access.
3. **Quiz Creation:**
   - Users can create public quizzes visible to everyone.
   - Users can create private quizzes with a unique join ID for restricted access.
   - The join ID is generated upon selection of the private option and is visible only in the user's profile.
4. **Profile Management:**
   - Users can view quizzes they have created and attended.
   - Private quizzes and their join IDs are displayed in the user's profile section.

5. **Leaderboard:**
   - Displays rankings based on total scores from quizzes.
   - Updates in real-time as users complete quizzes.

Detailed Description of the Functionality

User Authentication

- **Sign Up/Login:** Users create accounts or log in using secure authentication methods.

Quiz Participation

- **Public Quizzes:** Listed on the dashboard and accessible to all users.
- **Private Quizzes:** Requires a unique 8-digit join ID to access. The join ID must be entered on the "Join Quiz" page.

Quiz Creation

- **Public Quizzes:** Users create quizzes that are listed publicly.
- **Private Quizzes:**
  - **Join ID Generation:** An 8-digit code is generated when a quiz is marked as private.
  - **Visibility:** Private quizzes are not shown on the public dashboard.
  - **Join Code:** Displayed in the user's profile under "My Quizzes" and shared with intended participants.

Profile Management

- **View and Manage Quizzes:** Users see a list of quizzes they have created or attended. For private quizzes, the join ID is visible and can be copied for sharing.

Leaderboard

- **Ranking System:** Users are ranked based on their total quiz scores. The leaderboard updates automatically as quizzes are completed.

Use Cases and User Stories

Use Case 1: Create a Private Quiz

- **Actor:** Registered User
- **Description:** A user creates a quiz with a private join ID.
- **Steps:**
  1. User logs in and navigates to the quiz creation page.
  2. User selects the option to make the quiz private.
  3. System generates an 8-digit join ID.
  4. User saves the quiz. The join ID is displayed in the user's profile under "My Quizzes."

Use Case 2: Participate in a Private Quiz

- **Actor:** Registered User
- **Description:** A user joins a private quiz using a join ID.

- **Steps:**
    1. User navigates to the "Join Quiz" page.
    2. User enters the 8-digit join ID.
    3. System validates the join ID and provides access to the quiz.
    4. User completes the quiz and receives feedback.

Use Case 3: View Private Join ID

- **Actor:** Quiz Creator
- **Description:** A user views the join ID for a private quiz they created.
- **Steps:**
    1. User logs in and navigates to their profile.
    2. User selects "My Quizzes."
    3. User views the private join ID associated with each private quiz.

Conclusion

The Quiz Web App effectively combines quiz engagement with advanced features like the private join ID to enhance user control and privacy. The integration of this feature allows for exclusive access to quizzes, adding flexibility and security to the quiz creation process. The app provides a comprehensive solution for quiz participation and management while supporting competitive engagement through a leaderboard.

Future Enhancements

- **Mobile Application:** Develop a mobile version for broader access.
- **Advanced Analytics:** Implement detailed analytics and performance metrics.
- **Offline Functionality:** Add offline capabilities and synchronization features.
- **Admin Interface:** Create advanced tools for managing quizzes and user accounts.
- **AI integration:** Generate quiz with given topic.

This project report outlines the robust functionality of the Quiz Web App, emphasizing the private join ID feature and suggesting potential future enhancements to further enrich the user experience.

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