

Group 3

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DOST and IT Quiz App Documentation

Overview

The **DOST and IT Quiz App** is an interactive web-based quiz application designed to test users' knowledge about the Department of Science and Technology (DOST) and Information Technology (IT). The application features multiple-choice questions, a timer-based challenge, and a leaderboard for tracking high scores. It aims to provide an engaging learning experience while promoting awareness about DOST and its contributions to science and technology.

Features

1. **User Registration** - Players enter their name before starting the quiz.
2. **Timed Questions** - Each question has a countdown timer of 20 seconds.
3. **Score Tracking** - Users earn points based on correct answers and speed bonuses.
4. **Feedback System** - The app provides immediate feedback on whether an answer is correct or incorrect.
5. **Leaderboard** - The top five scores are stored using local storage.
6. **Restart and Share Options** - Users can restart the quiz or share their scores via Web Share API.
7. **DOST and IT-Themed Questions** - The quiz includes a diverse set of questions related to DOST programs, IT concepts, and technological innovations.
8. **Hint System** - Users can access hints to assist with answering questions.
9. **Responsive Design** - The app is optimized for both desktop and mobile devices.

Technologies Used

- **React.js** - Frontend framework for building UI components.
- **useState and useEffect Hooks** - State management and side effects handling.
- **Local Storage** - Storing leaderboard data persistently.
- **CSS** - Styling the UI elements.
- **Web Share API** - Allows users to share their scores with others.

Code Explanation

State Management

The app utilizes the `useState` hook for managing different aspects of the quiz:

- `currentQuestion` - Tracks the current question index.
- `score` - Stores the player's score.
- `showFeedback` - Controls the display of answer feedback.
- `quizCompleted` - Determines if the quiz has ended.
- `timer` - Manages the countdown timer.
- `showHint` - Enables optional hint display.
- `leaderboard` - Stores top scores using local storage.
- `showWelcome` - Controls the display of the welcome screen.
- `playerName` - Stores the entered name of the player.

Timer Functionality

The `useEffect` hook is used to manage the countdown timer:

- A timer starts for each question.
- If the timer reaches zero, an incorrect answer is automatically registered.
- The timer resets when moving to the next question.

Answer Handling

The `handleAnswer` function:

1. Checks if the selected answer is correct.
2. Awards 10 points for a correct answer and an additional 5 points if answered quickly.
3. Displays feedback for 1.5 seconds.
4. Moves to the next question or ends the quiz if all questions are answered.

Leaderboard Management

The `updateLeaderboard` function:

- Stores the player's score in local storage.
- Ensures only the top five scores are saved.
- Updates the displayed leaderboard dynamically.

Restart and Sharing

- `handleRestart` resets the quiz state and allows players to restart.
- `handleShare` uses the Web Share API to let users share their scores.

User Flow

1. The player enters their name and starts the quiz.
2. Questions are displayed one by one with a 20-second timer.
3. The player selects an answer and receives instant feedback.
4. The quiz ends when all questions are answered, showing the final score and leaderboard.
5. The player can restart the quiz or share their score.

Conclusion

The **DOST and IT Quiz App** is an engaging and educational tool designed to enhance knowledge in science and technology. With an intuitive UI, state management, and interactive features, it provides a seamless quiz-taking experience. The application serves as an excellent learning resource for students, professionals, and technology enthusiasts who wish to test and expand their understanding of DOST and IT-related topics.