Online Quiz Application Documentation

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1. Project Overview

The **Online Quiz Application** is a web-based quiz platform built using Angular. It allows users to answer multiple-choice questions within a time limit, tracks their scores, and provides an option to restart the quiz.
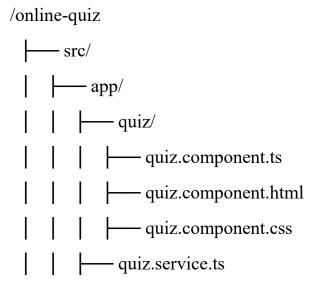
2. Features

- Multiple-choice quiz questions.
- Countdown timer for each quiz session.
- Score tracking and display.
- Restart quiz functionality.
- Responsive UI built with Angular Material.

3. Technologies Used

- **Frontend**: Angular (Standalone Component)
- **Styling**: CSS, Angular Material
- **Data Management**: Angular Service

4. Project Structure

/online-quiz

```
├── src/
│   ├── app/
│   │   ├── quiz/
│   │   │   ├── quiz.component.ts
│   │   │   ├── quiz.component.html
│   │   │   ├── quiz.component.css
│   │   ├── quiz.service.ts
```

```
|    ├── index.html
|    ├── main.ts
├── angular.json
├── package.json
├── tsconfig.json
```

5. Data Flow

1. **User Interaction:**

   - The user selects an answer from multiple-choice options.

   - The "Next" button submits the answer.

2. **Data Processing:**

   - The selected answer is checked against the correct answer stored in quiz.service.ts.

   - The score is updated if the answer is correct.

3. **Timer Management:**

   - A countdown timer starts when the quiz begins.

   - If time runs out, the quiz ends automatically.

4. **Result Display:**

   - At the end of the quiz, the user's final score is displayed.

   - The user can restart the quiz.

6. Algorithm

Step 1: Start the Quiz

1. Display the first question.

2. Start the countdown timer.

Step 2: User Interaction

3. Wait for the user to select an answer.

4. Store the selected answer.

Step 3: Process Answer

5. Check if the selected answer is correct.

6. If correct, increase the score.

Step 4: Move to Next Question or End Quiz

7. If more questions are available, move to the next question.

8. If no questions remain or timer reaches zero, display results.

Step 5: Display Results & Restart Option

9. Show the user's final score.

10. Ask if the user wants to restart the quiz.

11. If yes, reset the score and restart the quiz.

12. If no, end the session.

7. Installation & Setup

1. **Clone the repository:**

2. git clone <repository_url>

3. cd online-quiz

4. **Install dependencies:**

5. npm install

6. **Run the application:**

7. ng serve

8. **Open in browser:** Navigate to http://localhost:4200/.

8. Conclusion

The Online Quiz Application provides an engaging way for users to test their knowledge with a timer-based quiz system. It is built using Angular's standalone component structure for better maintainability and efficiency.