



CEN 308 SOFTWARE ENGINEERING

PROJECT DOCUMENTATION

QUIZ APP

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1. Introduction

The purpose of this document is to pose as a documentation on Quiz App Project

This document will cover:

- Technologies used
- Database entities
- Architecture
- Design patterns

1.1. About the Project

Quiz app is a simple quiz app used by students to prepare for upcoming exams. The application has a list of subjects users can choose, followed by a set of multiple choice quizzes from that subject. Users can pick a quiz to practice on and will get an evaluated score after they finish. [Link to hosted project here](#)

1.2. Project Functionalities and Screenshots



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Database Systems



Mobile Programming



Web Programming



Probability and Statistics



Computer Networks



Object Oriented
Programming



Cloud Computing



Embedded Systems



Database Systems

Quiz 1

Quiz 2

Quiz 3

Quiz 4

Database Systems / Quiz 1

1. What is Mongo DB?

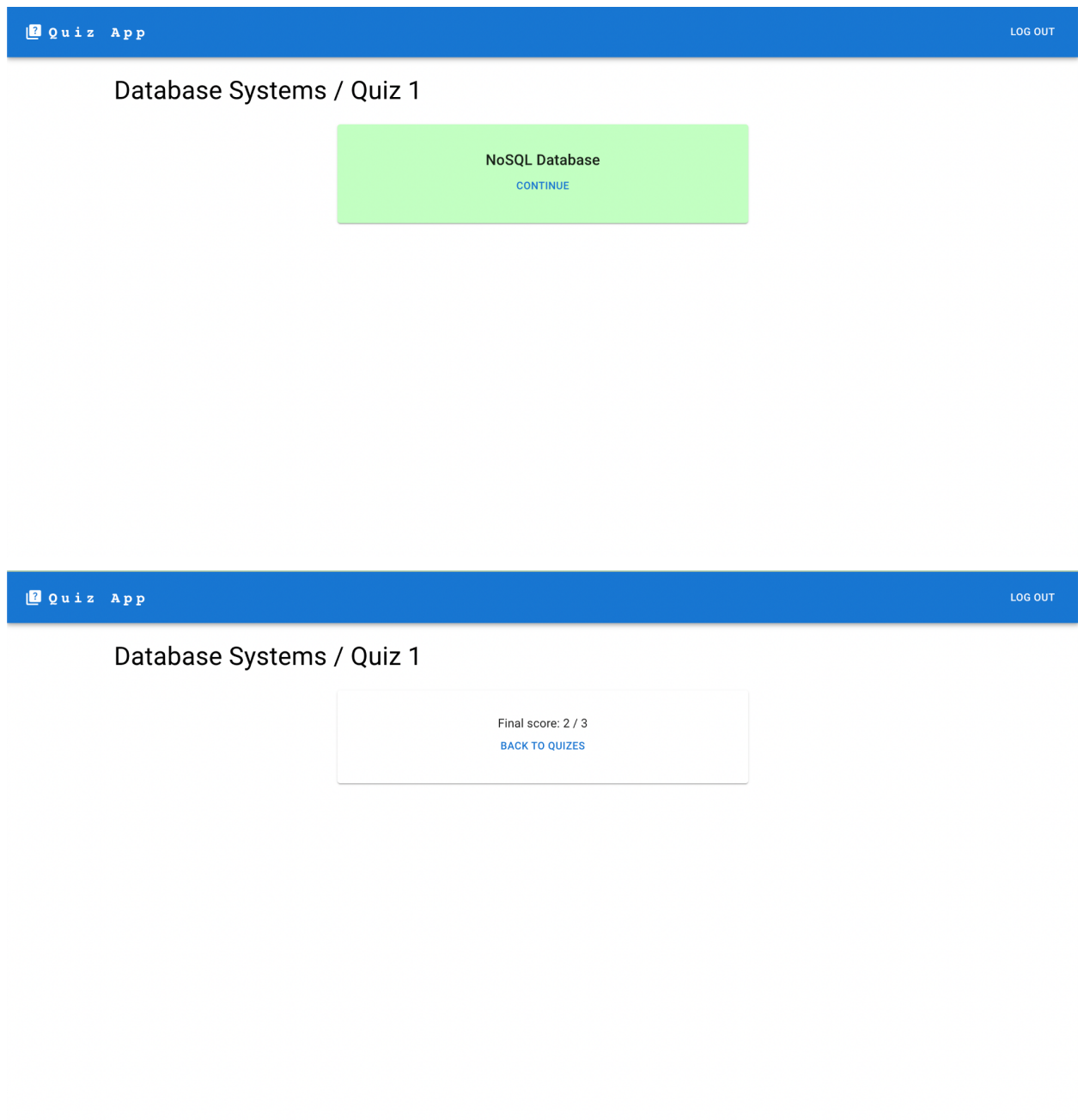
- ☐ Relational Database
- ☐ Object Database
- ☐ List Database
- ☐ NoSQL Database

ANSWER

Database Systems / Quiz 1

~~Relational Database~~
NoSQL Database

CONTINUE



2. Project Structure

2.1. Technologies

The project is implemented using React.js as a frontend. We followed React best practices for coding standards.

The backend is implemented using Firebase. It's a simple to use and set up platform. It requires little to no additional effort to set up for a simple project such as a quiz app.

The database used is Firebase Firestore. It's a firebase hosted, cloud based NO-SQL database.

We used material design for UI implementation as it provides out of the box UI Components that users are already familiar with.

2.2. Database Entities

- Users
 - o email
 - o password
- Subjects
 - o subjectName
 - o subjectIcon
- Quiz
 - o questions[]
 - o subject
- Question
 - o question
 - o answers[]
 - o correctAnswer
- Answer
 - o text
 - o id

2.3. Architectural Pattern

Standard react architecture pattern:

- React app starts with a single root component.
- Root component is build using one or more component.
- Each component can be nested with other component to any level.
- Composition is one of the core concepts of React library. So, each component is build by composing smaller components instead of inheriting one component from another component.
- Most of the components are user interface components.
- React app can include third party component for specific purpose such as routing, animation, state management, etc.

2.4. Design Patterns

- Stateless components
- Conditional rendering
- Controlled components
- React hooks

3. Conclusion

The project implementation ended up being as simple as the idea itself. We could further improve by creating a CMS for subjects and quizzes, adding leaderboards and crowd sourced quizzes etc.