QUIZ APPLICATION

A Project Report

submitted in partial fulfillment of the requirements

of

……. Applied Cloud Computing for Software Development ……

by

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This project would not have been possible without the collaborative efforts of all those mentioned above. Thank you for being an integral part of this journey.

ABSTRACT

➢ This project focuses on the design and implementation of a comprehensive quiz application employing CRUD (Create, Read, Update, Delete) concepts to manage quiz-related entities. The primary entities in the system include quizzes, questions, options, and users.

➢ The CRUD operations are systematically integrated into the application, allowing users to create new quizzes, questions, and options. The read operation facilitates the display of quizzes, their details, and user-specific quiz history. The update operation enables users to edit quiz content, question text, and option text, while the delete operation permits the removal of quizzes, questions, and options with appropriate confirmation mechanisms in place.

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INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1. Problem Statement:

In the realm of digital education and engagement, there is a growing need for interactive and accessible tools that enhance learning and assessment experiences. Traditional methods of quiz delivery often lack engagement, adaptability, and real-time feedback, leading to diminished interest and effectiveness in learning environments. To address this gap, the development of a dynamic website quiz application is proposed. This application aims to provide an engaging, user-friendly, and versatile platform for a wide range of users, including educators, students, and individuals seeking self-assessment tools

1.2. Problem Definition:

We aim to counteract these problems by building a quiz based application website.The website will have two types of login options either the new member can login as admin or as user.Both the user and admin have various functions that can be performed in website such as the admin has access to perform actions as adding quiz questions in website, deleting the questions, updating the questions and filtering the students based on their performance. The user can select domain, attempt quiz and can check score.

1.3. Expected Outcomes:

The dynamic website quiz application will revolutionize digital education by offering an interactive and accessible platform for enhanced learning and assessment experiences. Users, including educators, students, and

self-learners, can expect a user-friendly interface with real-time feedback, fostering engagement and adaptability. This innovative tool will reinvigorate traditional quiz delivery methods, promoting interest and effectiveness in diverse learning environments. The outcome is a versatile and dynamic learning solution that caters to the evolving needs of the digital education landscape.

1.4. Organization of the Report

The remaining report is organized as follows:

Chapter 2 Literature survey

Chapter 3 Proposed Methodology

Chapter 4 Implementation and Results

Chapter 5 Conclusion

CHAPTER 2

LITERATURE SURVEY

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LITERATURE SURVEY

2.1. Literature Survey

1. **Digital Education Trends:** Explore literature on current trends and advancements in digital education, focusing on the integration of interactive tools and technologies to improve engagement and learning outcomes.

2. **Online Assessment Methods:** Examine research on various online assessment methods and tools, comparing their effectiveness and limitations. Identify gaps in existing solutions that the proposed dynamic website quiz application aims to address.

3. **User Experience in Education Technology:** Investigate literature on user experience design principles in educational technology, considering how a user-friendly interface contributes to better engagement and learning experiences for educators and students.

4. **Adaptive Learning Systems:** Look into studies on adaptive learning systems and personalized learning experiences. Understand how dynamic quiz applications can adapt to individual learning styles and preferences, providing a more tailored approach to education.

5. **Real-time Feedback in Education:** Review literature discussing the importance of real-time feedback in educational settings and how it contributes to improved learning outcomes. Identify existing technologies that offer real-time feedback and assess their effectiveness.

6. **Educational Technology Adoption:** Examine literature related to the adoption of educational technologies in different learning environments. Understand the challenges and benefits associated with integrating interactive tools like dynamic quiz applications.

7. **Efficacy of Traditional Quiz Methods:** Compare studies evaluating the efficacy of traditional quiz delivery methods in educational settings. Identify shortcomings and areas for improvement that the proposed application aims to overcome.

8. **Accessibility in Digital Education:** Investigate literature on accessibility considerations in digital education tools, ensuring that the proposed dynamic quiz application is inclusive and caters to diverse user needs.

9. **Case Studies and Success Stories:** Look for case studies and success stories of educational institutions or platforms that have successfully implemented dynamic quiz applications. Analyze their experiences, challenges faced, and the impact on learning outcomes.

CHAPTER 3

PROPOSED METHODOLOGY

CHAPTER 3

PROPOSED METHODOLOGY

3.1 Design
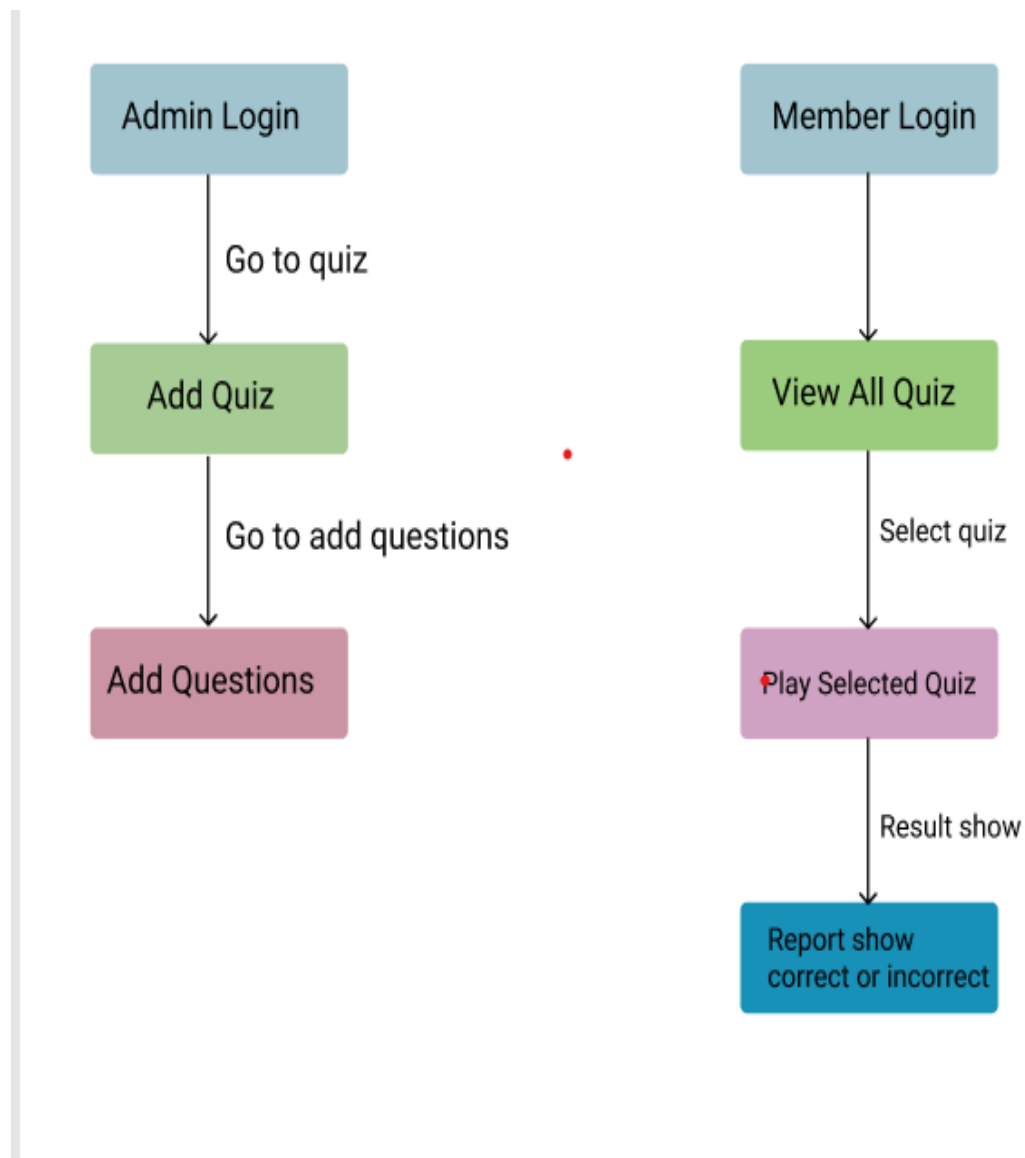
Figure 1

3.2 Modules Used:

Tools and technologies used:

Backend Technologies:

Choose a Backend Framework:

MySQL, SQLite

Example: PostgreSQL is a powerful open-source relational database that integrates well with Django.

Object-Relational Mapping (ORM):

ORM tools help interact with the database using high-level programming languages.

Example: Django ORM for Django, Sequelize for Node.js with Express.

Authentication:

Implement user authentication to secure your application.

Example: Django provides built-in authentication features; for Node.js, you might use packages like Passport.js.

API Documentation:

Example: Swagger for Django, Swagger UI for Express.js.

Web Server:

Deploy application on a web server.

Example: Gunicorn for Django, Nginx for Node.js.

Frontend Technologies:

Choose a Frontend Framework:

React

React is popular for its component-based architecture and large community support.

State Management:

Depending on your frontend framework, choose a state management solution.

Example: Redux for React, Vuex for Vue.js.

User Interface (UI) Library or Framework:

Utilize a library or framework for building a responsive and attractive UI.

Example: Material-UI for React, Vuetify for Vue.js.

HTTP Requests:

Use a library to handle HTTP requests.

Example: Axios for React, Vue Resource for Vue.js.

Routing:

Implement client-side routing for a smooth user experience.

Example: React Router for React, Vue Router for Vue.js.

Styling:

Choose a method for styling your application.

Example: Styled-components for React, SCSS for Vue.js.

Development Workflow:

Version Control:

Use version control to track changes in your code.

Example: Git and GitHub or GitLab.

Package Management:

Use a package manager to manage your project dependencies.

Example: npm for Node.js, pip for Python.

Development Environment:

Set up a development environment with code editors, debuggers, etc.

Example: Visual Studio Code, PyCharm.

Testing:

Implement unit testing and integration testing.

Example: Jest for React, Mocha for Node.js.

Continuous Integration/Continuous Deployment (CI/CD):

Automate the testing and deployment process.

Example: Jenkins, Travis CI.

3.3   Data Flow Diagram

The above diagram describes that in the server it contains all the data related to the users and it serves as a user interface for the users to attempt their quiz in their needed domain or concept , attempt quiz and get their score. Query is regarding the format of attempting the quiz and the response is about the getting their score from the attempted quiz.
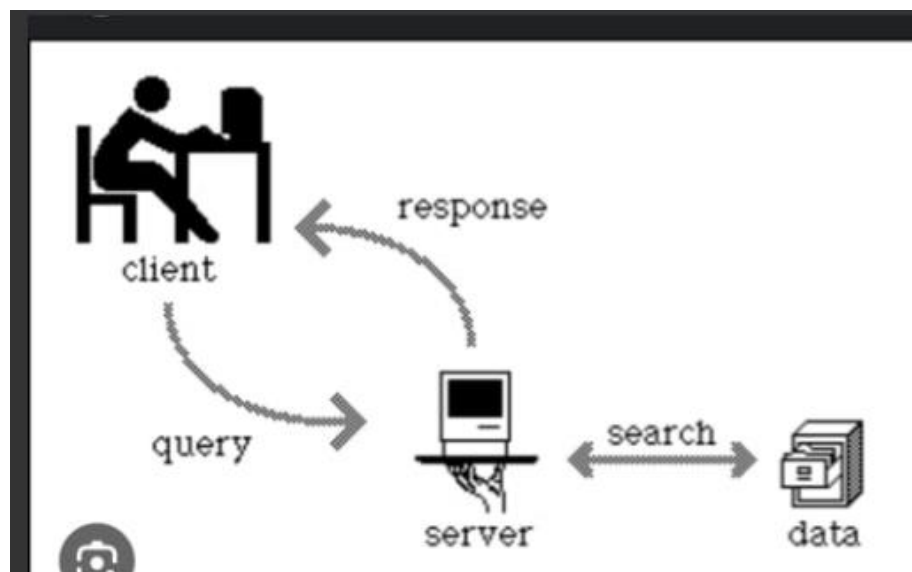
Figure 2

3.4 How does it solve our Problem statement

The quiz application is designed using Django as the backend framework with PostgreSQL as the database system. Django ORM facilitates efficient CRUD operations, managing entities such as quizzes, questions, options, and users. User authentication is seamlessly handled through Django's built-in features, and Django Rest Framework is employed for API documentation. The frontend is implemented in React, utilizing Redux for state management and Material-UI for a visually appealing user interface. Axios handles HTTP requests, React Router ensures smooth client-side routing, and Styled-components simplifies styling. The development workflow includes Git and GitHub for version control, npm for package management, Visual Studio Code as the code editor, Jest for testing, and Jenkins or Travis CI for continuous

integration and deployment, ensuring a robust and scalable quiz application.

CHAPTER 4

Implementation and Result

CHAPTER 4

IMPLEMENTATION and RESULT

Figure 3: Home Page

Figure 4: Student login

INSTRUCTIONS

Duration:
This quiz has a time limit of 20 minutes.

Number of Questions:
There are a total of 15 questions in this quiz.

Question Types:
The quiz consists of multiple-choice questions. Please read each question carefully before selecting your answer.

Scoring:
Each question is worth 1 point. Your final score will be calculated based on the number of correct answers.

Passing Score:
To pass this quiz, you need to score at least 70%.

Navigation:
You can navigate through the questions using the "Next" and "Previous" buttons. You can also review and change your answers before submitting the quiz.
Submission: When you have answered all the questions, click the "Submit" button. Once you submit your answers, you will not be able to make any further chang

Important Notes:

1. Do not refresh or close the browser while taking the quiz, as it may result in data loss.
2. Avoid using external resources or assistance during the quiz unless explicitly allowed.
3. Ensure a stable internet connection to prevent any disruptions during the quiz.
4. If you encounter any technical issues, please contact our support team at support@example.com.
5. Take the quiz in a distraction-free environment.

Start Quiz

Figure 5: Quiz Instruction page

COME   Date: 07-01-2024   Total Time: 10 Min
Time Taken: 0 6

DPSP's are mentioned in which schedule of Indian Constitution

○ Schedule 2

○ Schedule 3

○ Schedule 6

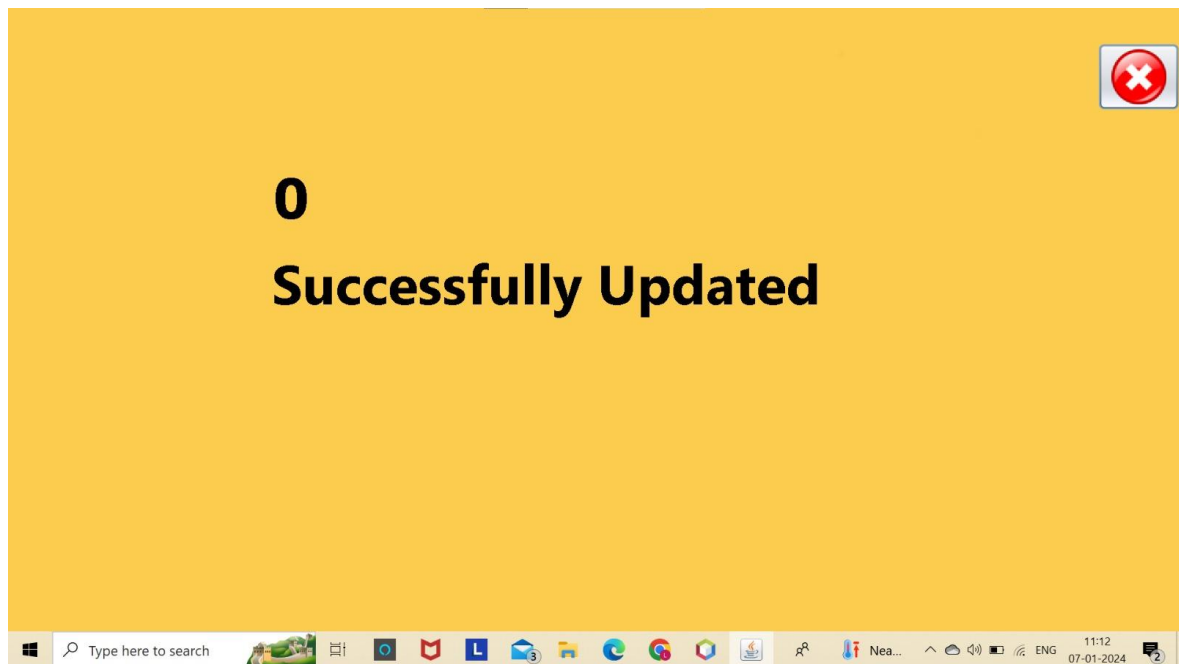○ Schedule 7

⊕ Next   **⊟ Submit**

Figure 6: Questions

Figure 7: quiz completion page
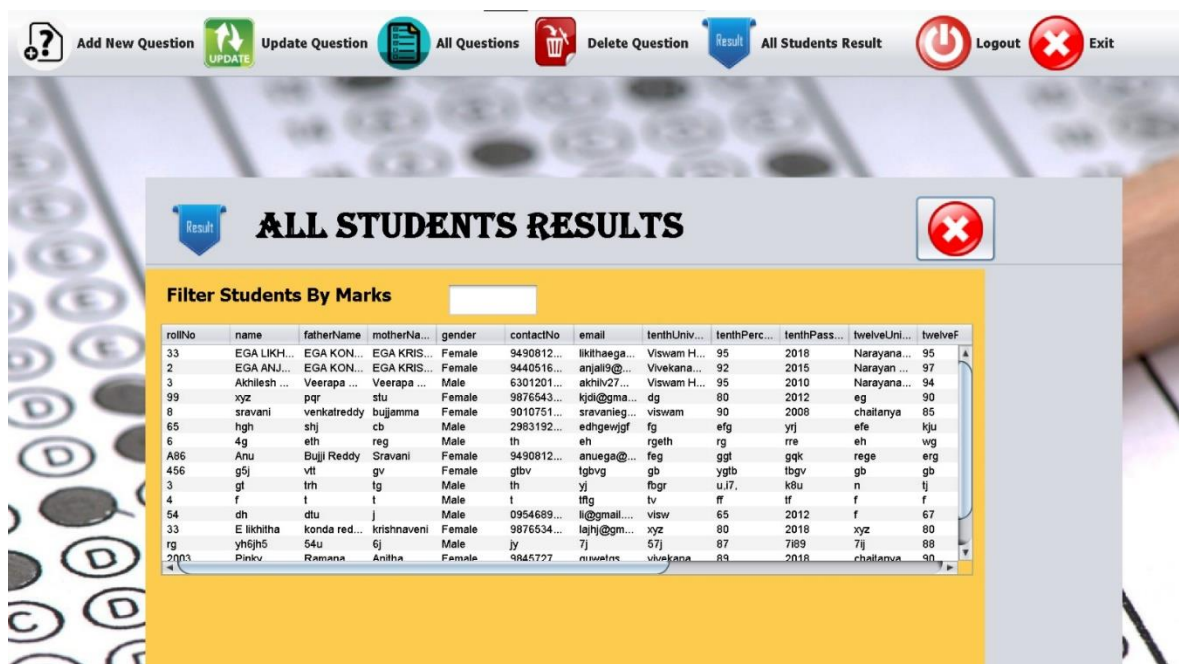
Figure 8: Results page
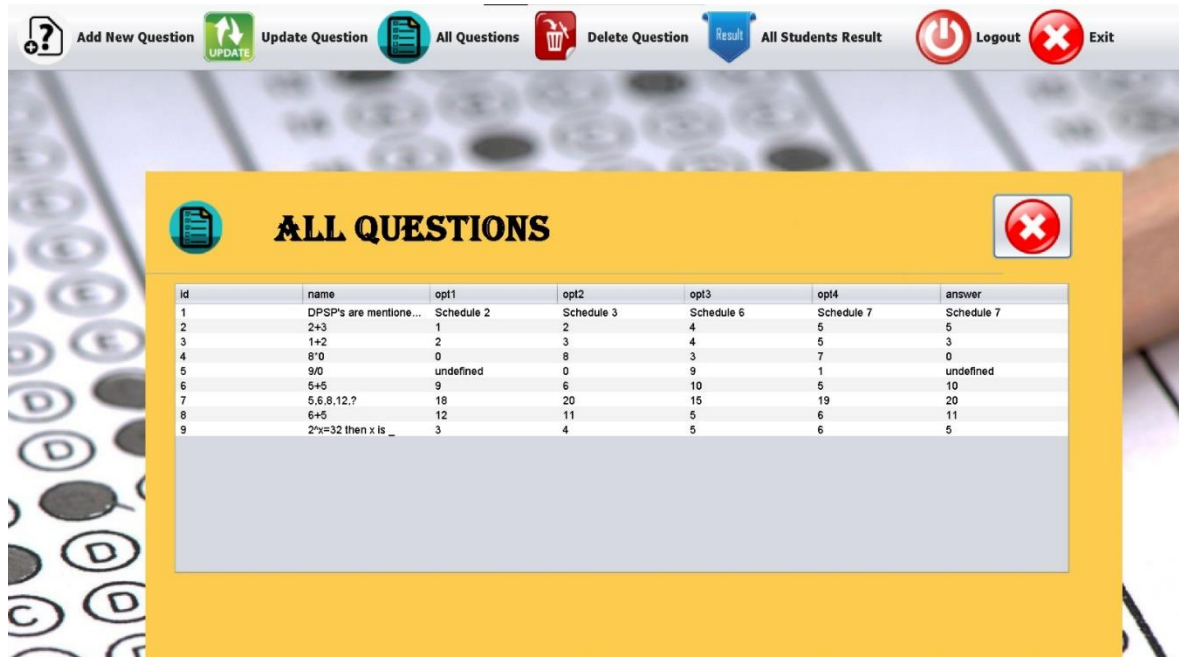
Figure 9: Deletion of question

Figure 10: list of all questions

QUIZ APPLICATION

Figure 11: Updation of all questions

Figure 12: Updation of question

CHAPTER 5

CONCLUSION

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CONCLUSION

5.1 CONCLUSION

➢ The development of a quiz application website represents a significant stride in enhancing interactive learning and assessment.

➢ The application's design prioritizes user engagement and ease of use, ensuring accessibility across various devices and platforms. Key features such as customizable quizzes, a variety of question types and performance tracking.

➢ It serves as a versatile and valuable resource for both knowledge acquisition and evaluation, promising to evolve continually in response to the changing landscapes of technology and education

5.2 FUTURE SCOPE

➢ Advanced Analytics and Reporting

➢ Collaboration Tools for Educators

➢ Content Expansion

➢ Corporate Training and Professional Development

GITHUB LINK

https://github.com/Likhithaega/Tech_Sakshyam

VIDEO LINK

https://github.com/Likhithaega/Tech_video

QUIZ APPLICATION