

Quiz Management System

(Advanced Java Project)



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1. Subject Description

The project “**QuizManager**” is a quiz management application which is developed to create, manage and control quizzes. The objective of this application is that the admin can create a quiz which comprises of a number of questions and answers. This application also allows users who are students to create accounts. The user can then take the quiz and receive a score at the end of the quiz once they have created an account. Each question can be created, updated, searched and deleted by the admin.

It is a web application which also uses other frameworks such as Spring, Maven, Hibernate and AngularJS.

We are using the term “Admin” as “the person who will manage all the information related to quizzes” and the term “User” are students who take the quiz.

2. Subject Analysis

2.1 Major features

It's a Web application where the user can perform the following function

1. For Admin

- Create a question
- Create answers for the questions
- Update a question
- Delete a question
- View questions
- Search a question

2. For student

- View a quiz
- View questions
- View answer options
- Select an answer to the question
- Receive score

For the security of the questions of the quizzes we have enforced access control by implementing user authentication where the Admin has to login first using an

ID/username and a password to perform the above listed functions. The users also have to login using an ID/username and a password to perform the above listed functions.

We use derby as the database engine for managing all the data.

Explain all the frameworks.

2.2 Application Feasibility

The development of this application with the given features is quite feasible. The application has a simple database architecture, it is password secured which makes it authentication dependent that means the data is secured.

2.3 Data Description

The major entities of this application are the Question table and the User table.

The Question table contains

- Question type
- Question
- Answer options
- Quiz name
- Correct answer

The user table contains

- isAdmin
- UserID
- Password

2.4 Expected result

The application is expected to authenticate the user through ID/Username and Password. After that, user should be able to perform below functions:

If admin

- **Create** a question
- **Update** a question
- **Delete** a question
- List the questions in the database
- **Search** the questions
- **Create** answers to the question
- **View** list of users

If User

- **Give** quiz
- **View** result

2.5 Scope of the application

Limitations:

- UID cannot be modified.
- Deletion is done for only one question at a time.
- Only MCQ questions available
- Update users by admin
- Add spring security
- Add timer

Evolutions:

- Multiple entries can be deleted at a time
- Multiple types of questions can be added
- Display if the answer is correct right after the student selects the answer
- Create a better UI using angularjs

3. Conception

3.1 Data structures

Hibernate framework is being used for this application. Hibernate is an ORM tool that simplifies the data creation, manipulation and access. It maps the object to the data stored in the database. We have defined a data model package where we have described all our tables as classes, once the application is built, with the help of hibernate tables are created in the database according to the tags found in the data model classes.

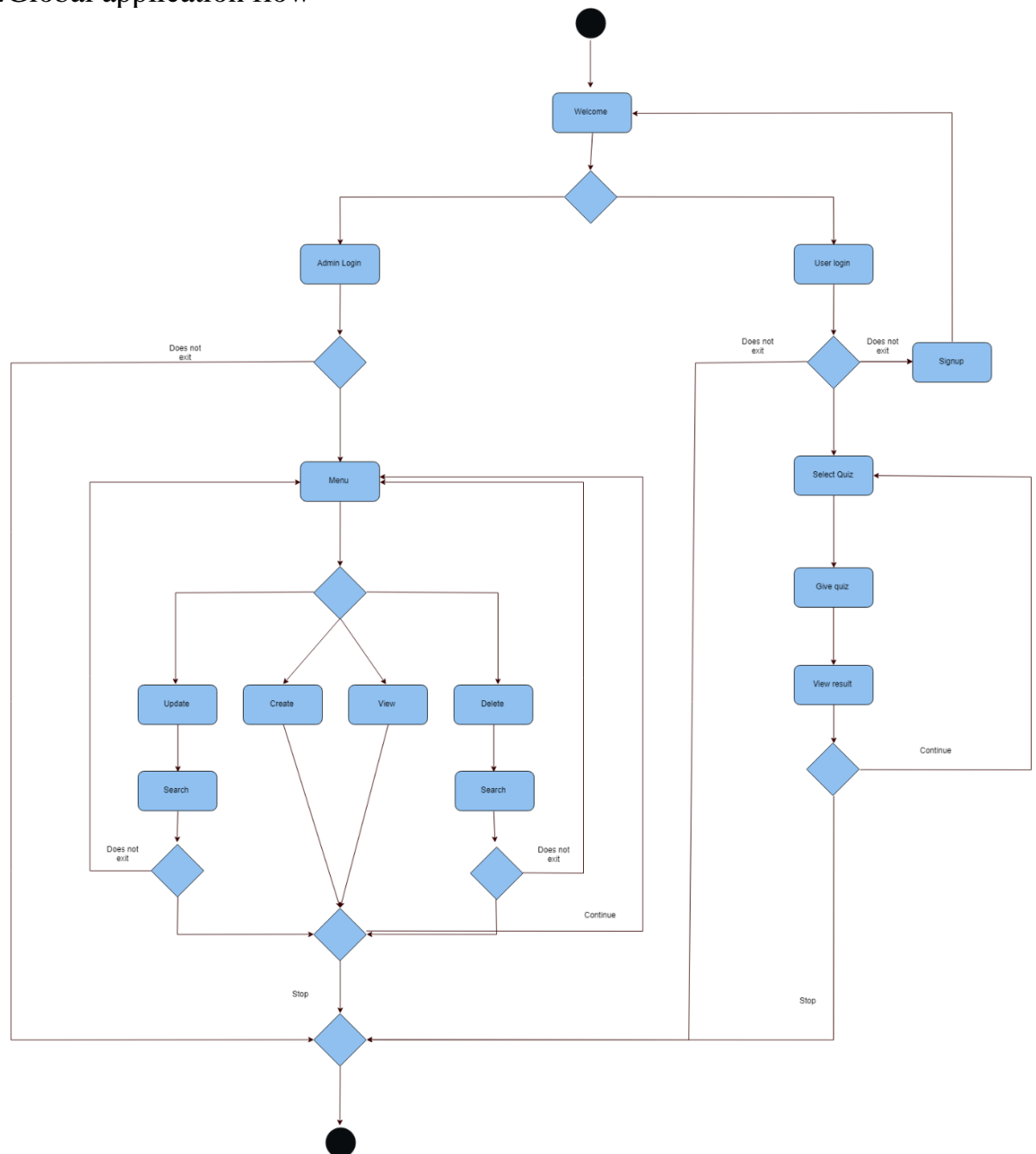
Question Table

Question_id	Question	Answer_options	Quiz_name

User Table

User_id	Username	Password	isAdmin

3.2 Global application flow

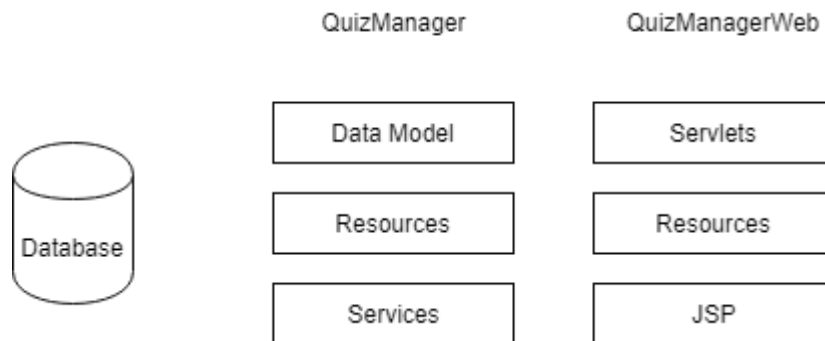


3.3 Global schema and major features schema

Global schema



Major Feature schema



4. Application Description

The Quiz management application is a web based application.

Authentication: User will be prompted to login as to authenticate him and has to submit his username and password

Menu:

The Admin can login and add MCQ questions, view, update and delete questions.

Quiz

The Student gets a view and can take a quiz where questions will be displayed with options of answers and one of them can be the correct answer

5. Bibliography

<http://thomas-broussard.fr/work/java/courses/project/advanced.xhtml>