**Java Quiz Project**

**Project submitted by Group H**

**Members**

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**Introduction**

The Java Quiz Application is designed to help users study Java programming by providing them with a quiz. The application allows students to register, log in, attempt the quiz, and view their results. The system also includes administrative functionalities such as managing student scores and adding questions to the quiz.

**Business Requirements**

* Create a quiz consisting of 10 Java-related questions with answers.
* Each question should have four options.
* The system should calculate and display the result of the quiz.
* The system should display the result based on the grade obtained.
* Display a sorted list of student IDs, names, and scores.
* Implement the functionality to fetch student details using a student ID.

**Functionalities**

* The Java Quiz Application includes the following functionalities:
* Store 10 Java-related questions with answers into the database: The application should store the quiz questions along with their correct answers in a database.
* Each question has four options: Each question in the quiz should have four options for the user to choose from.
* Calculate the quiz result: The system should calculate the result of the quiz based on the user's answers.
* Display the result based on grade: The application should display the user's result based on the grade obtained in the quiz.
* Display a sorted list of student IDs, names, and scores: The system should provide a sorted list of student IDs, names, and scores, showing the performance of each student.
* Fetch student details by using a student ID: The application should allow fetching student details by using their student ID.

**Guidelines**

* Design OOP concepts: The application should be designed using object-oriented programming concepts for better code organization and maintainability.
* Design separate methods: Implement separate methods for different functionalities to ensure modularity and code reusability.
* Follow Java coding standards: Adhere to the standard Java coding conventions for naming conventions, code formatting, and documentation.
* Handle exceptions and validate input: Implement exception handling and input validation to handle incorrect inputs and prevent unexpected errors.

**Technologies Used**

* The Java Quiz Application utilizes the following technologies:
* Core Java: The core Java programming language is used to develop the application logic.
* JDBC (Java Database Connectivity): JDBC is used to establish a connection with the database and perform database operations.
* Database: The application uses a database to store quiz questions, student information, and scores.

**User Stories**

**User Functionalities**

* Student Registration: Students should be able to register themselves in the application by providing necessary details.
* Student Login: Registered students should be able to log in to the application using their credentials.
* Display the list of questions: The application should display the list of Java quiz questions for the students to attempt.
* Store Quiz result into the database: After attempting the quiz, the system should store the student's quiz result in the database.
* Display Quiz result: The application should display the quiz result to the student after completing the quiz.

**Admin Functionalities**

* Display all student scores in ascending order: The system should provide the functionality to display all student scores in ascending order, allowing the admin to assess the performance of each student.
* Fetch student score by using ID: The application should allow the admin to fetch a student's score using their ID.
* Add question with four options into the database: The admin should be able to add new questions with four options into the quiz database.

**Conclusion**

This documentation provides an overview of the Java Quiz Application, including its business requirements, functionalities, guidelines, technologies used, and user stories. By following these guidelines, the application can be implemented effectively, helping users study Java through interactive quizzes.

**Guidelines failed to use :**

As the Project was done with following the guidelines. However as per the requirement of the project we failed to utilize below guidelines.

1. Foreign key relation with Primary key.
2. Collection Framework.