

A SMART QUIZ APPLICATION IN CLOUD ENVIRONMENT USING AWS

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Abstract- The notion of questioning has become increasingly popular among intellectual circles and in entertainment shows. Despite the fact that questions can be done in person and need much preparation, they contribute to individual knowledge improvement and are a popular source of enjoyment. This Java curriculum focuses on designing interactive applications queries with a very large quiz site. The program uses a lot of important concepts in the design of Java and the applet to get the final result is a view from the knowledge and get entertainment that includes value.[1] The system reduces paperwork and all information will be stored securely on the application. This app stores questions in a database where a set of six questions will appear. Designed to replace existing paper and manual adjustments. This program uses java as the front end and MySQL as the back end of the application. The implementation of the program in the organization will significantly reduce time and provide easily calculated marks.

The "Question System" project is a collection of many sorts of questions, such as technology, gaming, sports, and so on. All queries are accessible / playable, and the user points for the user. The user can view the responses and ask a follow-up question. There are a lot of questions available right now on the internet. However, there are a few providers who can help users and the app understand each other better, such as offering suitable replies, answering user inquiries, posting user queries and answers, and so on. Creating a user-friendly quiz app that includes: All questions are answered, and any questions are resolved. User query uploads and feedback, and improving the level of user knowledge. Developing an application that contains a solution to the aforementioned issues. The user will be able to see his current level and gain additional facts using this app. And with this app the user can increase his knowledge in the middle of the world.

Keywords: SQL, JAVA, JDBC, Swing, Database, Cloud(AWS).

I. INTRODUCTION

Purpose

This programme gives a location to display puzzles, practise grammar, and other skills. It gives a fantastic platform for students to not only assess their knowledge and abilities, but also to grow their knowledge and skills at the same time.

Scope

In terms of gathering information and sharing it with the rest of the world, the scope of this endeavour is quite vast. The following are a few examples: Because it is a web-based programme, it may be utilised from anywhere at any time. This programme will be utilised in both educational and corporate environments.

Problem Definition

"Our goal is to develop an app for users where the user can try any number of queries related to his or her preferences." [5] To begin, we must build connections to the

pages are linked to the server and the site. As a result, that may be a viable option. There are applications that now only provide a restricted number of inquiries relating to a distinct domain. Many applications lack a single place for inquiries on technology, G.K., games, and other topics. There is also no application where users may post queries and answers for others to see. We need to create an app that can tackle all of the difficulties listed above. With this user, he may obtain information, find answers to his questions, and share his information with the rest of the biosphere.

Proposed Solution

The application's primary goal is to locate questions and answers. The user must first register or log in to this programme using their user id and password. The user may then choose whatever questions they like. A guidance window appears before the quiz begins, including instructions pertaining to the quiz. The user might then begin receiving queries. The user may see if their answers are correct or incorrect, as well as their individual responses. If the user has a question about something, he or she can ask it. The user will gain credit points for each accurate response after completing the quiz. The administrator receives the questions at first, but after a period of time, the user can submit the questions and answers himself. [1]The questions are presented in the window when the administrator confirms them. Question-related request that we can resolve by the administrator and users of this software programme. This software has preliminary acknowledgement as well as a specific user who may ask and answer questions. Name, age, credentials, gender, cellphone number, credit score, and other information will be included in the user profile. This programme will offer a connection to another relevant application for learning purposes.[2]

II. SYSTEM REQUIREMENT ANALYSIS

Product Perspective

A java programme is used to create the quiz application. It interacts with the user and the readers in general.. Especially if it's Registration, Home, Login, Result, Quiz Forum, and User Profile pages. All of these a quiz app with four categories. Each segment will have ten questions, answer any inquiries, a "not tried" mark will appear. The entire marks discovered in the question will be displayed on the result screen, as well as the The incorrect answer will be presented alongside the right response. The main goal of this software is to help students and users improve their knowledge and abilities.

Product Function

To access your account, enter your login id and password. Account logout: At any moment, a student or user can log out of their account. The quiz was completed by the student/user, who got a score. Feedback might be from a student or a user. Take this quiz: The student/user has complete freedom in how he or she completes the quiz. Admin can add a question by selecting a topic from the drop-down menu.

User Classes And Characteristics

Users of the product must have a certain degree of proficiency. Users must understand how to use the system's features and profit from it.

Design And Implementation Constraints

Programming Language: JAVA.
 Platform: NETBEANS.
 Database: MySQL.
 Cloud Environment: AWS(Amazon Web Services)

Assumptions And Dependencies

Users of our application, we believe, should have some computer system expertise and access to the internet. We rely on sources where data is collected and validated.

User Required

The system's functions can be controlled by the administrator. Users of the platform, such as administrators, students, and users, motivation to safeguarded since the platform allows users to make modifications that haven't been made before, via login and password causes a ripple effect across the system. They can use the system to upload their information and changes.

III. ARCHITECTURE

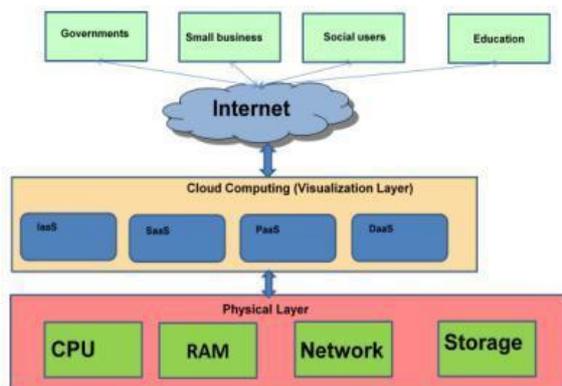


Figure-1 show the Cloud Computing Architecture.

Instance Type	EC unit	Cores	Architecture	Disk (GB)	RAM (GB)
Small	1	1	32	160	1.7
Medium (H-CPU)	5	2	32	350	1.7
Large	4	2	64	850	7.5
Extra Large	8	4	64	1690	15
Extra Large (H-CPU)	20	8	64	1690	7

Figure-2 show the Features of Amazon EC2 with different types of EC2 instance's Configurations.

Small	Medium (H-CPU)	Large	Extra Large	Extra Large (H-CPU)	Local Machine
656	375	110	125	125	360
734	375	125	172	125	360
844	375	109	124	125	359
650	438	172	187	125	360
STDDEV 122.9	STDDEV 23.5	STDDEV 48.9	STDDEV 27.7	STDDEV 7.2	STDDEV 1.1
Average 769.3	Average 383.2	Average 126.9	Average 153.8	Average 129.6	Average 359.8

Figure-3 show the Response time of EC2 Instance (in milliseconds).

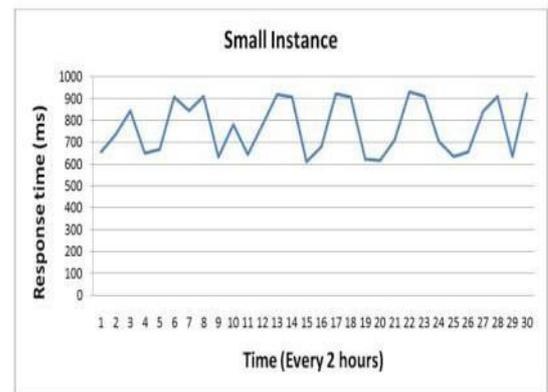


Figure-4 show the Response Time of Small EC2 Instances.

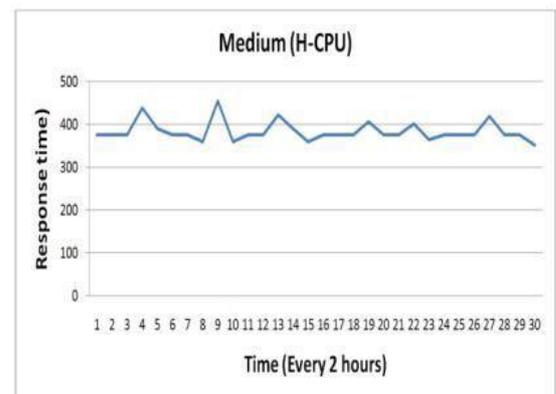


Figure-5 show the Response Time of Medium EC2 Instances.

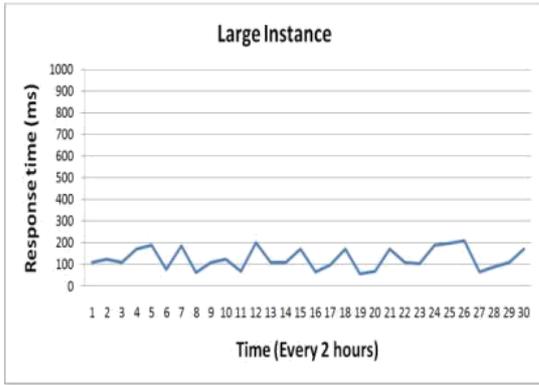


Figure-6 show the Response Time of Large EC2 Instances.

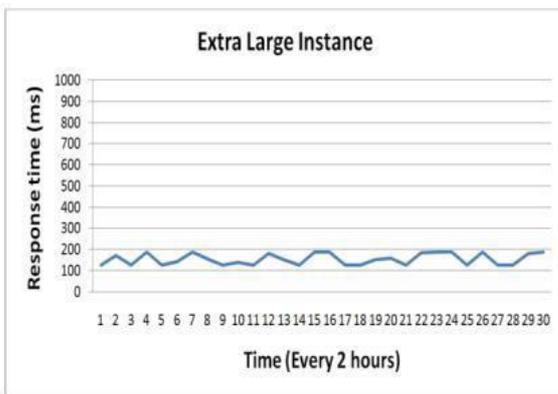


Figure-7 show the Response Time of Extra Large EC2 Instances.

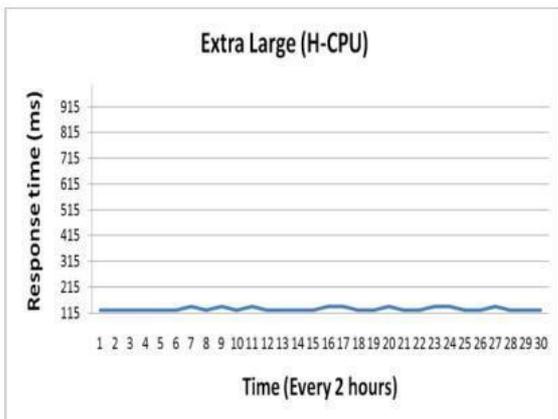


Figure-8 show the Response Time of Extra Large (H-CPU) EC2 Instances.

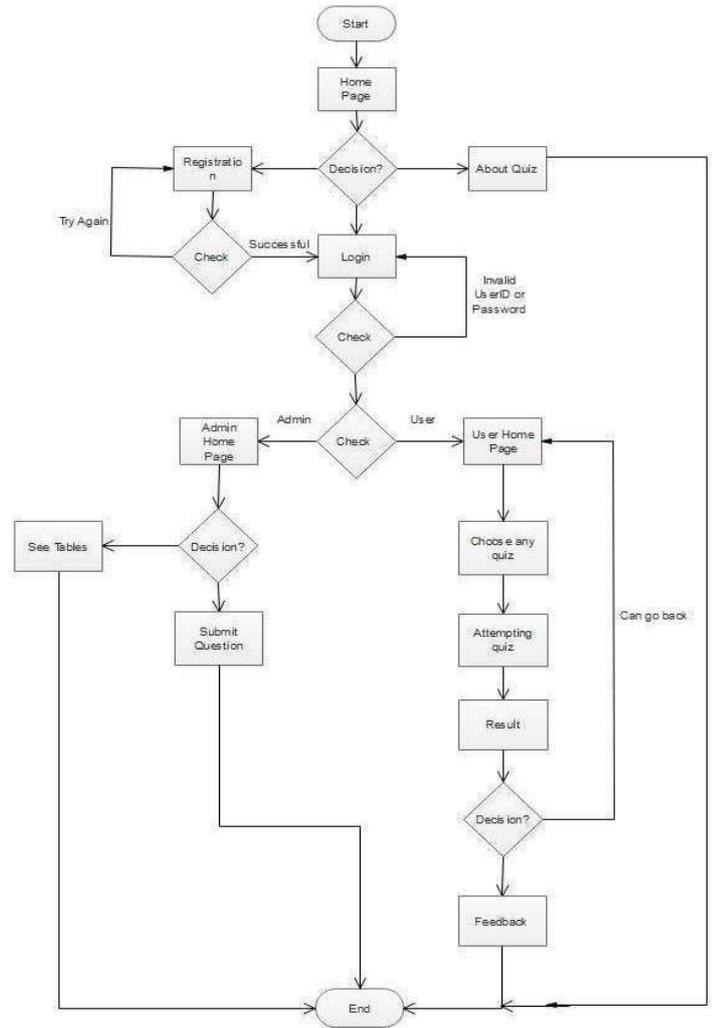


Figure-9 show the Flow Chart of the Quiz Application.

IV. ANALYSIS

Methodology Used

The software model utilised is the conventional lifecycle model, and the programming language used is JAVA.

Waterfall Process model

The project was developed using the JAVA programming language, and the software model employed was the traditional lifecycle model. Model of a Waterfall Process The first process model to present a sequential structure, detailing the core basic components of an efficient software development model, was the Classical Life Cycle or Waterfall Process Model. It comprises of the following phases: requirements analysis, design, coding, testing, and maintenance, and it builds the groundwork for several layers of software development.[4]

Waterfall model Advantages:

- A straightforward objective.
- Meek to comprehend, also to implement.
- Well-defined categories
- Organizing events is simple.
- Both the method and the outcome have been meticulously documented.
- Customers and end users are already aware of it.
- It's simple to use.

V. TESTING

Waterfall model disadvantages:

A well-thought-out design and a methodical approach are essential. The waterfall approach has a "fixed point solution," which means even minor construction changes were difficult to combine with the most recent design phase.

A complete design modification was done since the need was decided before going on to the proposal segment, utilising an unfinished traditional of criteria.[3]

Once a phase is completed, it is not repeated, i.e., moving from one waterfall to another and vice versa is not supported; in recent days, meeting the case of huge projects has become problematic.

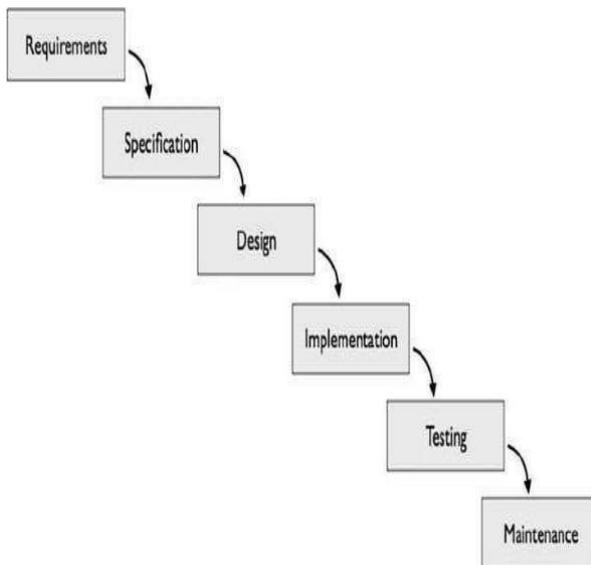


Figure-10 show Waterfall Cycle Model.

Functional Requirement

The functioning requirements for the online quizzing system are outlined in this section.

This category includes the following modules:

Module for students or users.

Module for administration.

Module for Students or Users:

The student or user must first log in to the application. They can take any of the quizzes that are available to them. After the exam is completed, the student/user will receive the results instantly.

Module for Administration:

The manager has access to all data blocks and may construct a question by choosing a topic.

Response time- After a user logs in, the system will respond within 2 seconds.

Capacity- The system may support several computers, but it must be installed individually on each one.

Prerequisites for safety

All logged data, changes, and user actions are safely saved.

A requirement for security

Any changes to the database must be made in a timely manner and under the supervision of the system.[6]

White Box Testing

An internal design solution for software solution, design, and coding is specified as a white box test. The code seems in the tester in this category of examination. It emphasizes on confirming the movement of ideas and outputs via the app and usability, and improving safety. Clear Test, Open Box Check, Structural Check, Open Test, Code-Based Testing, and Glass Box Check are all names for the white box check.[7]

White Box Test Cases

Registration is the name of the test case.

Enter your name, date of birth, and phone number.

Registration was completed successfully.

Successful registration is one of the expected outcomes.

The outcome is a pass.

Login is the name of the test case.

Input: Make sure the username and password are correct.

The login was successful.

Expected Outcomes: successful

application The outcome is a pass.

Login is the name of the test case.

The username is valid; however, the password is wrong.

Login failed as a result.

Login failure was predicted.

The outcome was a failure.

Black Box Testing

A black box check, also referred as a behaviour check, is a methodology of software testing in which the tester is uninformed of the test item's internal structure, design, or purpose. These tests may or may not be effective; nonetheless, they are frequently successful.[7]

Black Box Test cases

Registration is the name of the test case.

Fill up the needed registration information.

Registration was completed successfully.

Expected Outcomes: Successful registration.

The outcome is a pass.

Registration is the name of the test case.

Fill up the needed registration information.

Verification was done incorrectly.

Expected Results: No registration was completed.

The outcome was a failure.

VI. SNAPSHOTS



Figure-11 show the Login Page of Quiz Application.

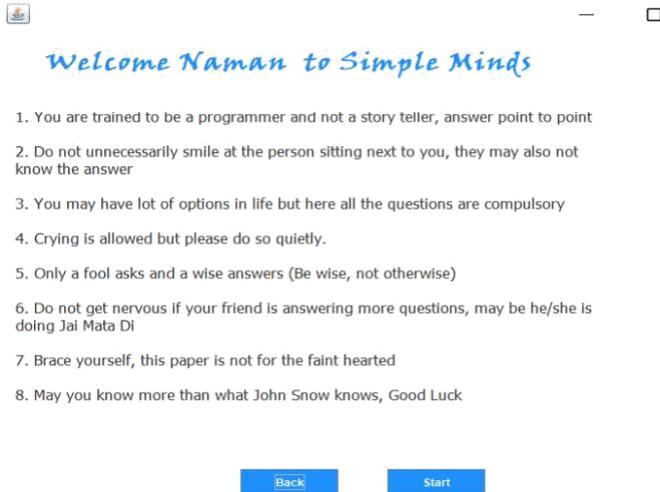


Figure-12 show the Rules Page of Quiz Application.



Figure-13 show the Quiz Page of Quiz Application.



Figure-14 show the Score Page of Quiz Application.

VII. CONCLUSION

This online quiz software allows you to play questions at any time and from anywhere. Save time by eliminating the need for the user to wait for the outcome. As a result, the reader / user is unable to wait for the outcome. All students / users learn new skills and information. At any point during the application process, the administrator maintains the right to ask additional questions. The user may create an account, log in, and submit tests using his or her unique id, as well as view the results.

VIII. REFERENCES

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