BALANCING CHALLENGE AND ACCESSIBILITY: THE IMPACT OF EASY, MEDIUM AND HARD QUIZ RANGES ON GRE PREPARATION

Rashmi Amardeep[1] , Sudeepa R[2] , Sukanya V[2] , Swetha Jagatha[2] , Tejas Kumar C[2]

[1] Associate Professor, Department of Information Science and Engineering, Dayananda Sagar Academy of Technology and Management, Bengaluru, India

[2] B.E. Students, Department of Information Science and Engineering, Dayananda Sagar Academy of Technology and Management, Bengaluru, India

Abstract: This study has been undertaken to understand the importance of GRE exams and the need for practicing the topics of GRE if the goal is to complete master's in abroad. This dynamic tool is meticulously crafted to cater to the unique needs of GRE aspirants, offering a comprehensive array of features aimed at enhancing their understanding and performance across Verbal Reasoning, Quantitative Reasoning. The primary objective of a quiz application is to provide GRE sample papers and practice tests on a regular basis to evaluate their test performance and gain familiarity with the test pattern.

Index Terms – GRE Quiz, Three levels – Easy, Medium and Hard

I. INTRODUCTION

The Graduate Record Examination, also known as the GRE, is a standardized test that is frequently taken by applicants seeking admission to graduate programs worldwide, including master's and doctoral degrees. It evaluates critical thinking, analytical writing, quantitative reasoning, and verbal reasoning abilities. The Educational Testing Service (ETS) administers the GRE, which is normally taken by candidates for graduate programs, business schools, and some law schools. Scores on the GRE are used by admissions committees as part of the evaluation process for applicants.

The GRE plays a multifaceted role in the graduate school admissions process. Firstly, it serves as a standardized measure to assess the academic readiness and potential of applicants across diverse educational backgrounds. Admissions committees utilize GRE scores alongside other application materials to make informed decisions about candidate suitability. Moreover, the GRE provides a common metric for comparing applicants, ensuring fairness in the evaluation process. Beyond admissions, GRE scores may influence eligibility for financial aid, scholarships, and assistantships, further emphasizing its importance to prospective students. Additionally, institutions may employ GRE scores for course placement purposes, enhancing the alignment between students' skill levels and program requirements. Lastly, the aggregated data from GRE scores can contribute to research efforts in understanding trends in graduate admissions and educational outcomes, as well as inform institutional rankings. In sum, the GRE serves as a vital tool for both applicants and institutions, facilitating transparent and equitable graduate admissions processes.

Preparing for the GRE exam is paramount for prospective graduate students due to several key reasons. Firstly, rigorous preparation increases the likelihood of achieving higher scores, which can significantly enhance one's chances of gaining admission to competitive graduate programs and securing financial aid or scholarships. Moreover, thorough preparation familiarizes test-takers with the specific format, structure, and timing

constraints of each GRE section, thereby instilling confidence and reducing anxiety on test day. Additionally, preparation allows individuals to identify their strengths and weaknesses through practice tests and study materials, enabling targeted improvement efforts. Developing effective test-taking strategies, such as time management and question-solving techniques, is also a crucial aspect of GRE preparation that can lead to improved performance. Ultimately, investing time and effort in GRE preparation not only maximizes scores but also builds confidence, reduces test anxiety, and positions candidates favorably in the competitive landscape of graduate school admissions.

This GRE Quiz Platform transcends conventional learning methods by offering a dynamic and immersive quiz experience. This dynamic tool is meticulously crafted to cater to the unique needs of GRE aspirants, offering a comprehensive array of features aimed at enhancing their understanding and performance across Verbal Reasoning, Quantitative Reasoning. The primary objective of a quiz application is to provide GRE sample papers and practice tests on a regular basis to evaluate their test performance and gain familiarity with the test pattern. Dive into questions mirroring the exam format. This helps in knowing weaker and stronger areas.The three-level quizzes—easy, medium, and hard—offer consumers a personalized experience by letting them choose tests that correspond with their learning objectives. Users will navigate a user-friendly interface, accessing a diverse range of quizzes, tracking of their progress, allowing to set and achieve milestones. This project will be designed to address the time-consuming issues with the manual system, such as the examiners' time being wasted examining answer sheets after tests, by developing an application that would check accurate answers, save examiner time, and conduct exams efficiently.

II. EXECUTION

i. Design Methodology

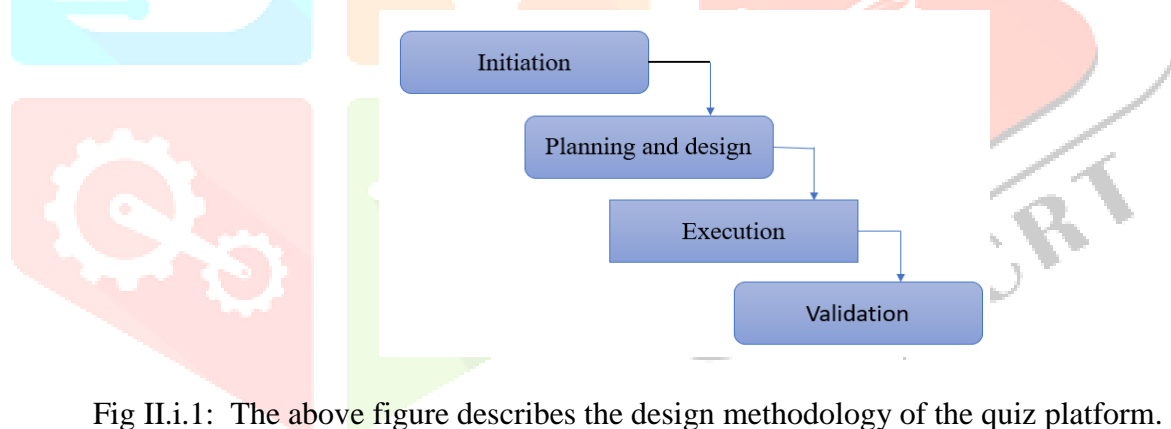The methodology used for developing this system is 'waterfall model'.

Fig II.i.1: The above figure describes the design methodology of the quiz platform.

Initiation (Objective Definition and Audience Analysis):

- Difficulty-Based Selection: Questions can be chosen based on the difficulty level specified by the users.

- Admin login : Only admin will have the access to create the quizzes or delete the quizzes.

- User Authentication: Put in place safe authentication procedures to guarantee that the quiz can only be taken by authorized users.

Planning and design:

- Gather and organize a diverse range of relevant materials, including test paper samples, previous year question papers, and pattern or Blueprint of the GRE , GRE sample papers and practice tests.

- Designing a visually appealing and consistent layout for the quiz application using designing model like Figma.

Execution (construction and coding):

- Platform :

  a. Visual Studio Code (Frontend tool)

    - Visual Studio Code is a simplified code editor that facilitates development tasks such as version control, task execution and debugging.

    - It seeks to give developers the precise tools they require for an efficient code-build-debug cycle.

    - Frontend : HTML, CSS, JavaScript

    - Backend | Database : MySQL, PHP

  b. XAMPP Control Pannel :

    - Use the Control Panel to start or stop Apache and MySQL as well as check if they are currently running.

Validation (Testing) & Update Regularly:

- A wide range of tasks are usually included in the testing process to make sure the website meets user needs, works properly, and offers a satisfying user experience.

- The method of testing should be thorough and cover different aspects of the GRE quiz website to deliver a reliable and high-quality product to users.

ii. Objectives

- The primary objective of a quiz application is to provide GRE sample papers and practice tests on a regular basis to evaluate their test performance and gain familiarity with the test pattern. Dive into questions mirroring the exam format. This helps in knowing weaker and stronger areas.
- The three-level quizzes—easy, medium, and hard—offer consumers a personalized experience by letting them choose tests that correspond with their learning objectives.
- Users will navigate a user-friendly interface, accessing a diverse range of quizzes, tracking of their progress, allowing to set and achieve milestones.
- Whether they are at home or on the go, our mobile-accessible platform ensures flexible and convenient preparation.

iii. Characteristics of Admin side

- User Management : Ability to manage users, including adding, editing, and deleting user accounts.
- Content Management : Capability to create, edit, and delete quizzes, questions, and answers.
- Access Control : Using role-based access control to limit access to specific features or data according to the roles that users have (administrator, moderator, etc.).
- Analytics and Reporting : Providing insights into quiz performance, including user participation, completion rates, and question difficulty analysis.
- Question Bank Management : Managing a repository of questions for reuse across multiple quizzes, with features for categorization and search.
- Feedback Management: Allowing administrators to review and respond to user feedback, suggestions, or complaints related to quizzes.
- Scalability : Designing the platform to handle increasing numbers of users, quizzes, and data as the platform grows.
- Audit Trail : Logging all admin activities for accountability and tracking purposes, including changes made to quizzes, users, or system settings.

- Responsive Design : Ensuring the admin interface is accessible and usable across different devices and screen sizes.

iv. Characteristics of Student side

- User-Friendly Interface: Even for younger students, the platform should have an easy-to-use interface.
- Engaging Content : Incorporating multimedia elements like images, videos, and interactive questions can make the quizzes more engaging and effective for learning.
- Adaptive Learning : The platform could offer adaptive quizzes that adjust difficulty based on the student's performance, ensuring an appropriate level of challenge.
- Progress Tracking : Students should be able to track their progress over time, see which topics they need to focus on, and celebrate achievements.
- Gamification Elements : Adding gamification features such as badges, leaderboards, and rewards can motivate students to participate and excel in quizzes.
- Feedback Mechanism : Providing immediate feedback on quiz responses can help students understand their mistakes and learn from them effectively.
- Accessibility : Ensuring that the platform is accessible to students with disabilities by providing options for screen readers, adjustable font sizes, and other accessibility features.
- Customization Options : Students may appreciate the ability to customize their quizzes based on their preferences, such as choosing specific topics or adjusting time limits.
- Mobile Compatibility : Since many students use smartphones or tablets, ensuring that the platform is mobile-friendly or has a dedicated app can enhance accessibility and convenience.

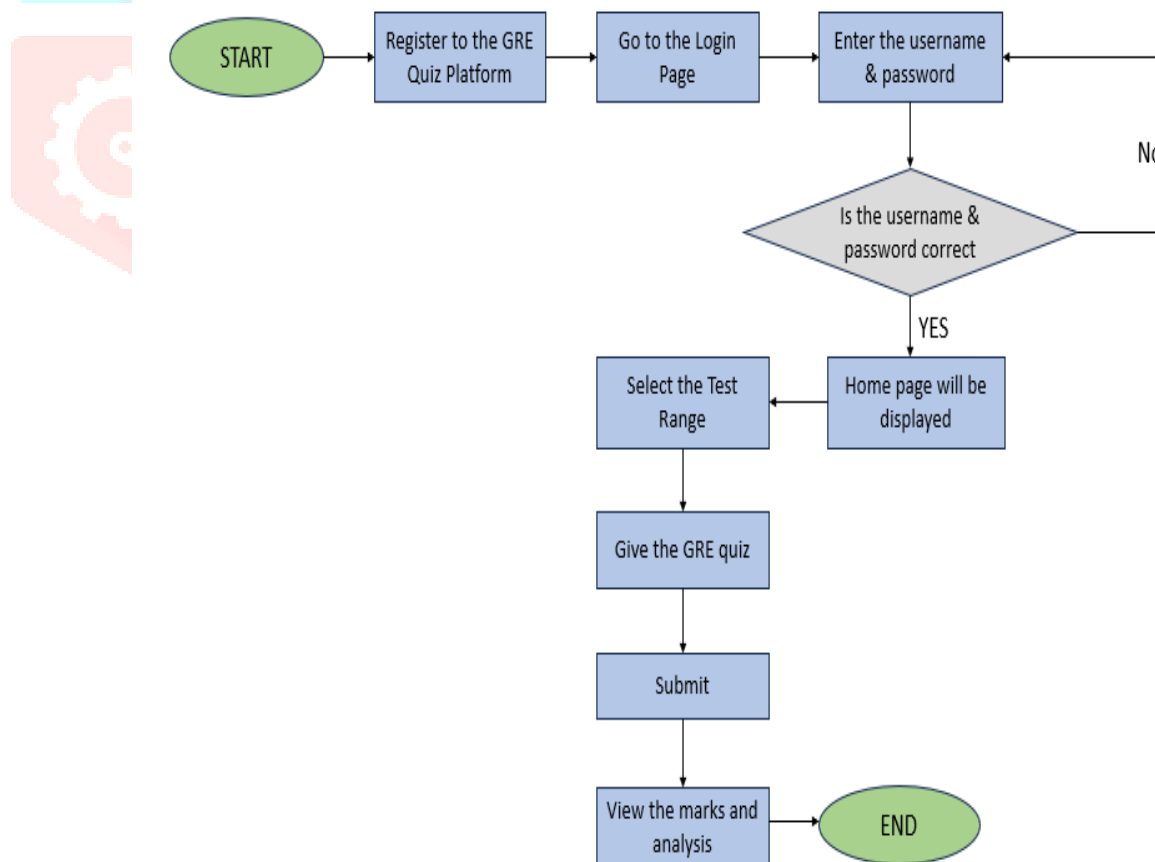### v. Flowchart and Algorithm steps.

Fig II.v.1 : The above figure describes the algorithm steps for operating the quiz platform.

The Algorithm has the following steps:

Step 1: Open the quiz platform.
Step 2: Student should register to the quiz platform.
Step 3: Visit the login page.
Step 4: Put the password and username in here.
Step 5: If the username and password are correct , then , Home page of the quiz platform will be displayed on the screen.
Step 6: Student should select the type and range of the exam.
Step 7: Click on start and take the gre exam.
Step 8: Submit the test and view the results.
Step 9 : View the leaderboard and analyse.
Step 10: Student can log out.

vi. Model

- The below shown figure (Fig II.v.1) displays the model of the quiz platform.Users login details, gre quizzes of all ranges will be stored in the database.
- Username, password, Email-id, phone number and rest of the details will be stored in the database. Whenever the user want to take up the test, he/she can directly login. Admin details will also be stored in the database.
- The home page will be displayed once they login successfully and all the quizzes available will be displayed. The user can choose the test they wish to give.
- Three types of levels (easy, medium, hard) will be provided for each type of gre topic.
- The questions will be collected from previous year papers, model question papers and will be segregated into easy , medium and hard quizzes.
- The student can choose any of the test type and give the test. Once all the questions are answered, they must submit. Once all the procedures are done, they can view the test and leaderboard and analyse their performance.
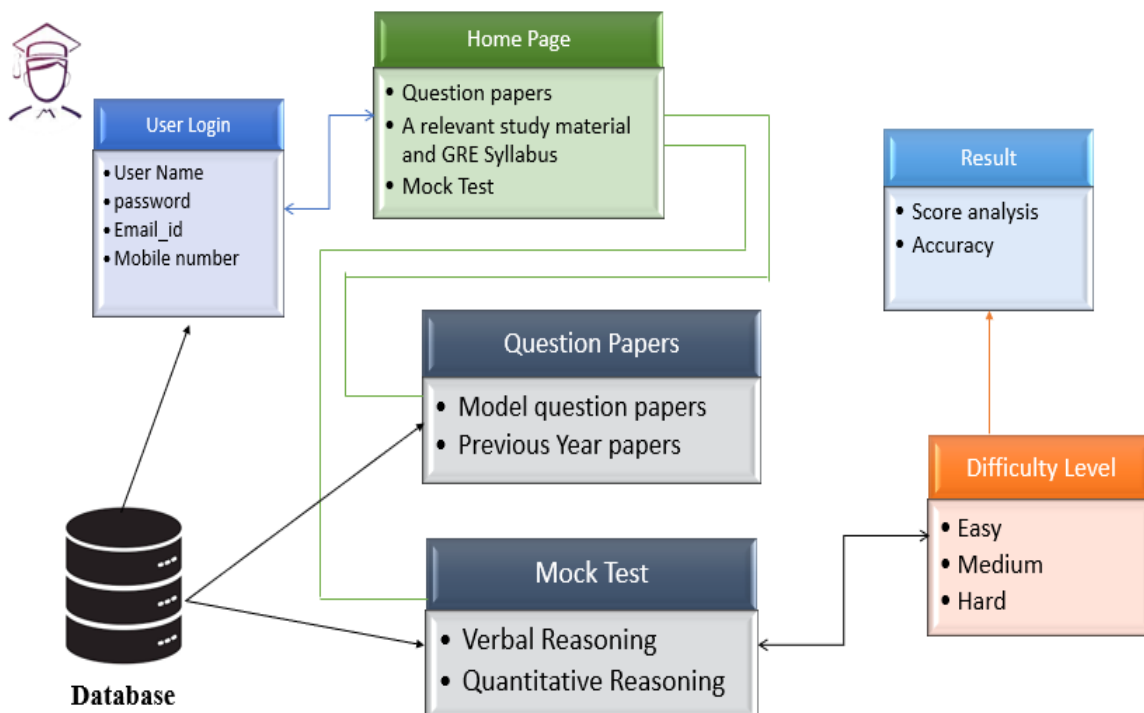

Fig II.vi.1: Figure displays the model of the quiz platform.

III. RESULT

i.   FINAL OUTCOME

The Techno Master project aims to deliver an online GRE-based quiz platform, providing users with personalized test scores based on selected difficulty levels. The project encompasses two main modules: an Admin Module and a User Module.

a. Admin Module: Administrators can insert GRE practice questions categorized by difficulty levels into the system. They can also view and manage user feedback submitted via the platform.
b. User Module: Registered users can access the platform, select their preferred difficulty level for the GRE quiz, and receive instant scoring upon test completion within the allocated time. Users can also provide feedback on their quiz experience.

This project focuses on facilitating GRE preparation through an interactive online quiz environment, with distinct functionalities tailored for administrators and users to engage efficiently and effectively.

ii.   Admin Side Overview

The administration module provides authorized users with privileged access to manage various aspects of the platform. Upon accessing the home page, administrators can navigate to the admin section and authenticate using their designated user ID and password. Once logged in, they are directed to the admin dashboard.
The admin dashboard presents several essential features:

a. Home: Offers an overview of available quiz levels for user testing. Admins can control the availability of these tests, enabling or disabling them as needed.
b. Users: Provides a comprehensive list of users who have taken tests, including detailed user profiles. Admins can manage this list by deleting user records.
c. Feedback: Displays feedback details from users, including the number of responses received and associated user information.
d. Leaderboard: Allows admins to view user rankings based on test scores, highlighting top performers.
e. Add Quiz: Enables admins to create new quiz levels. This feature includes specifying quiz details such as questions, marks per question (including negative marking), and test duration.
f. Remove Quiz: Permits admins to delete quiz levels they have created**.**

iii.   Student Side Overview:

The student interface on the home page allows new users to register for tests by completing a detailed registration form. For returning users, a login option is available using their unique user ID and password. Upon successful login, students are directed to their personal page featuring key sections: Home, My History, and Leaderboard.

a. Home: Here, students access test instructions and available test levels, selecting the desired test to begin. Each test can be attempted only once. During the test, multiple-choice questions (MCQs) are presented with options for selection. Students can navigate between questions using next, previous, and reset options, and can skip questions they're unsure of. Negative marking is applied for incorrect answers. After completing all questions, students submit the test for evaluation. Upon finishing the test, students receive immediate feedback displaying correct, incorrect, and unattempted questions, along with their total score and detailed question-wise analysis.
b. My History: Students can view their test history, including scores and details for each test taken. This section also allows students to provide feedback on their experiences.
c. Leaderboard: Students can access a leaderboard showcasing top-performing users based on test scores.

IV. CONCLUSION

Software called Quiz System was created to administer online tests with time limits and level restrictions. The username and email address that are added to the database are needed to access the quiz system. The rules and regulations, which include information on the time limit, the number of questions to be answered, and the scoring system, are displayed prior to the start of the quiz. To begin the quiz, the number of questions with four options is displayed. Correct answers will result in an increase in score, while incorrect answers will result in a deduction. The quiz ends if the user clicks "Submit" or the time limit is exceeded. The final score will be shown and updated along with the username in the database. The system can be operated by a user with very little computer experience. Additionally, the system generates results in the short form that management requests.

V. FURTHER ENHANCEMENT

Further enhancements for the quiz application include implementing a feature where users are able to edit questions after saving them, ensuring greater stability and integrity within the quiz application. Adding more security features to the quiz web application to stop people from cheating on online exams can be another possible improvement. Following students around as they complete the test and reporting any questionable behavior could be one way to address this issue. This could contribute to maintaining the validity of the evaluation procedure and give students a safer testing environment.