1. INTRODUCTION

1.1 PURPOSE

The purpose of this document is to build a company/enterprise level website specialized in education field scoop, Its main aim is to let students able to examine themselves to gain knowledge by Q&A strategy and to be prepared to face actual exams.

1.2 DOCUMENT CONVENTIONS

This document uses the following conventions.

|  |  |
| --- | --- |
| DB | Database |
| ERD | Entity Relationship diagram |
|  |  |
|  |  |

1.3 INTENDED AUDIENCE AND READING SUGGESTIONS

Target audience for this writing is software development team who will contribute in building this project including developers, designer, content-creators and not only for software development team but also for the project owner.

To assist readers in gaining a deeper understanding of this document’s content, there are provided links in recommended resources These may include books, academic articles, or websites that provide additional information on the topic.

This software application assumes a basic level of technical knowledge and will use some technical terms in section 1.1.1. However, the application will be designed to be accessible to those without a technical background. To ensure that users are able to understand the technical concepts presented in the application, the application will provide definitions for any technical terms used. Additionally, the application will provide links to external resources that provide more in-depth explanations of technical concepts, for users who are interested in learning more.

1.4 PROJECT SCOPE

The project scoop includes design, development, and deployment of a new online examination system, before creating exams, this project will make teacher users able to create questions and store them in the DB with descripting this questions with several details that will make the system able to group it with other questions in the right category, then after all of that, system will be able to generate questions according to users entries to create a specially customized exam for him.

And finally system will include statistical methods to encourage all types of users including questions creators and examinees.

1.5 REFERENCES

* <https://krazytech.com/projects>
* Fundamentals of database systems by ramez elmarsi and shamkant b.navathe

## 2. OVERALL DESCRIPTION

## 2.1 PRODUCT PERSPECTIVE

## 2. SYSTEM FEATURES

## Features are prioritized using Moscow method.

## Dashboards for each type of users

## Description and priority: Must-have

## Stimulus/Response Sequences

## The stimulus for the creation of each dashboard is the login credentials of the user. When a user logs into the system, the system will use their credentials to identify their user type and retrieve the relevant data for their dashboard.

## The response sequence for each dashboard will vary depending on the user type and their specific needs. However, in general, the dashboard should display relevant data in a clear and concise manner, with the ability to drill down into more detailed information if necessary.

## Functional Requriments

* + 1. Customization: Each user should be able to customize their dashboard to suit their specific needs. This may include selecting which data is displayed, changing the layout of the dashboard, and setting alerts for key performance indicators.
    2. Real-time data: The dashboard should display real-time data whenever possible, to ensure that users have access to the most up-to-date information.
    3. Accessibility: The dashboard should be accessible from any device with an internet connection, and should be optimized for both desktop and mobile viewing.
    4. Security: The dashboard should be protected by appropriate security measures, such as user authentication and authorization, to ensure that sensitive data is not accessible to unauthorized users.

## Admin customization/creation for each subject

## Description and priority: Must-have

## Stimulus/Response Sequences

## The stimulus for this feature is when the system administrator accesses the create subject page. The response sequence includes the ability to create a new one.

## Functional Requirments

## i. The system must allow the administrator to create a new subject and input relevant information such as name, age, gender, and any other relevant details.

## ii. The system must allow the administrator to customize settings for each subject, such as their access permissions, data visualization preferences, and notification settings.

## iii. The system must provide the ability to view and edit existing subject information and settings. iv. The system must provide the ability to delete a subject if necessary. v. The system must ensure that only the administrator has access to the admin customization/creation features and that all changes made are logged in the system's audit trail.

## Make admin users able to create and store questions bank

## Description and priority: Must-have

## Stimulus/Response Sequences

## Functional Requirments

## Exam Creation

## Description and priority: Should-have

## Stimulus/Response Sequences

## Functional Requirments

## Submit a request by non-admin teachers to create new questions

## Description and priority: Should-have

## Stimulus/Response Sequences

## Functional Requirments

## Submit a request by non-admin teachers to be able to create questions

## Description and priority: Should-have

## Stimulus/Response Sequences

## Functional Requirments

## Alerts

## Description and priority: could-have

## Stimulus/Response Sequences

## Functional Requirments

## Feedback System

## Description and priority: could-have

## Stimulus/Response Sequences

## Functional Requirments

## Save questions in favourites by student users

## Description and priority: could-have

## Stimulus/Response Sequences

## Functional Requirments

## Emails

## Description and priority: would-have

## Stimulus/Response Sequences

## Functional Requirments

## Direct chat

## Description and priority: would-have

## Stimulus/Response Sequences

## Functional Requirments

## Save Questions in drafts for question-creator users

## Description and priority: would-have

## Stimulus/Response Sequences

## Functional Requirments

## 4. EXTERNAL INTERFACE REQUIREMENTS

## 4.1 USER INTERFACES: The user interface of the software system shall be designed to be intuitive and easy to use, with a modern and responsive design. The user interface shall consist of a dashboard that displays the main functions of the system and a navigation bar for accessing different sections of the software. The dashboard shall include visualizations of important metrics and data, such as charts and graphs, to help users understand the system's performance. User interface in exam pages should be easy a pretty straight forward and not distracting, to make help users to put their full focus in the exam.

## 4.2 HARDWARE INTERFACES:

## This website should be able to run on any smart modern device, including old poor specs ones.

## 4.3 SOFTWARE INTERFACES:

## Following are the software used for the Exams Bank application.

|  |  |
| --- | --- |
| Software use | Description |
| Laravel |  |
| Vue |  |
| MySQL |  |

4.4 COMMUNICATION INTERFACES

The software system shall communicate with other systems and devices using HTTPS protocol, also it supports all types of web browsers.

## 4. OTHER NONFUNCTIONAL REQUIREMENTS

## 5.1 PERFORMANCE REQUIREMENTS

## The software system must respond to user requests within 2 seconds, even during peak usage times. The system must be able to handle a maximum of 1000 simultaneous users without any degradation in performance. The system must be able to process at least 5000 transactions per minute with an average response time of 1 second per transaction. The system must also be able to scale up to handle increased usage in the future.

## 5.2 SAFETY REQUIREMENTS

## The software system must comply with all relevant safety regulations and standards, including ISO 26262 and IEC 61508. The system must be designed to minimize the risk of harm to users, operators, and the environment. The system must include fail-safe mechanisms to prevent accidents or catastrophic failures. The system must also be tested and validated to ensure that it meets all safety requirements.

## 5.3 SECURITY REQUIREMENTS

## Security requirements specify the measures that the software system must implement to protect against unauthorized access, data breaches, and other security threats. These requirements may include authentication, authorization, data encryption, and security auditing.

## The system must also include intrusion detection and prevention mechanisms to protect against hacking attempts. The system must be tested and validated to ensure that it meets all security requirements.

## 5.4 SOFTWARE QUALITY ATTRIBUTES

* MAINTAINABILITY: The web application must support regular updates to ensure compatibility with the latest web technologies, Bug fixes, and security patches.
* USABILITY: The flight schedules should satisfy a maximum number of customers’ needs. The application should be accessible on multiple devices, including desktop and mobile.