PROJECT REPORT

On

"Smart Question Bank"

Submitted in partial fulfilment of the requirements for the award of

Bachelor of Technology (B. Tech)

In the department of

Computer Science & Engineering



Submitted by

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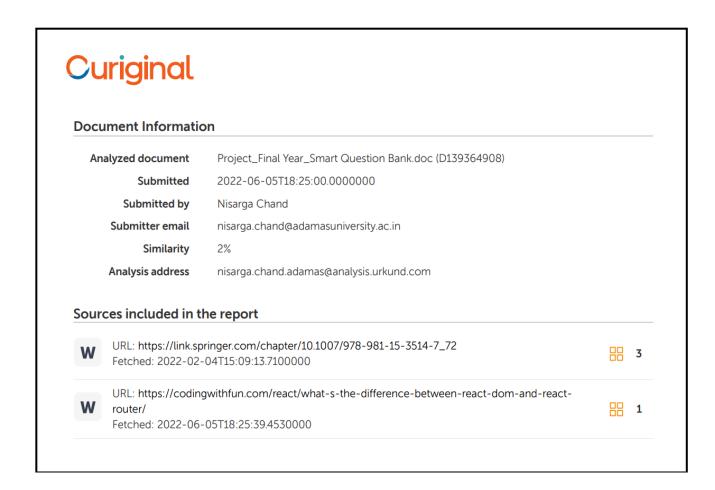
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Under the Guidance of

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School of Engineering & Technology ADAMAS University, Kolkata, West Bengal Jan 2022 – June 2022

Plagiarism Checking Report



CERTIFICATE

This is to certify that the project report entitled "project topic", submitted to the School of Engineering & Technology (SOET), ADAMAS UNIVERSITY, KOLKATA in partial fulfilment for the completion of Semester – 8th of the degree of Bachelor of Technology in the department of Computer Science & Engineering, is a record of bonafide work carried out by Anurag Pattnayak (UG/02/BTCSE/2018/046), Ayontika Das (UG/02/BTCSE/2018/055), Dishari Mandal (UG/02/BTCSE/2018/067), Om Tiwari (UG/02/BTCSE/2018/054) under our guidance.

All help received by us from various sources have been duly acknowledged.

No part of this report has been submitted elsewhere for award of any other degree.

Mentor Ms. Riya Sil (Asst. Professor, Dept. of CSE)

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> HOD CSE Prof. (Dr.) Sajal Saha

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mentioning of the people whose constant guidance and encouragement made it possible. We take pleasure in presenting before you, our project, which is the result of a studied blend of both research and knowledge.

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Finally, we express our gratitude to all other members who are involved either directly or indirectly for the completion of this project.

DECLARATION

We, the undersigned, declare that the project entitled 'Smart Question Bank', being submitted in partial fulfillment for the award of Bachelor of Engineering Degree in Computer Science & Engineering, affiliated to ADAMAS UNIVERSITY, is the work carried out by us.

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ABSTRACT

This project is the smart approach and solution of subject-wise preparation with different types of questions like descriptive types questions, multiple types of questions, etc. on a web platform where teachers will give the questions. The project aims to create a database of questions on an IT-supported platform and provide the faculty with options to create different types of question papers of varying difficulty levels on demand. The project focuses on the development and deployment of a smart solution for subject-wise preparation of question banks for implementation at an institution. The solution is expected to be used primarily by members of faculty who would create questions pertaining to different units of different subjects of varying levels of difficulty.

The planned solution is expected to not only maintain a repository for such questions but also provide the stakeholders with the option to create question papers speedily and on-demand. It will very helpful for the online assessment. The application will have 3 types of users – teachers, reviewers, and admins. The technologies used in this project include ReactJS, Material UI, NodeJS, Expess.JS, and MariaDB for backend database, React-Redux, and MVC Framework. There are two different types of Dashboards that will open for teacher's login and reviewer login on the other side. This web page is to create questions for students and check how much they are preparing.

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Introduction

1.1Background

The primary focus of this Smart Question Bank project is an online platform where teachers can upload different types of questions (MCQ, long answer type, etc.). This project aims to create a database of questions on the IT-supported platform and provide the faculty with options to create different types of question papers of varying difficulty levels on demand.

As the prerequisites of this project, we need knowledge of web development with HTML, CSS, JavaScript, ReactJS, Material UI, NodeJS, Expess.JS, and MariaDB. We need good and proper implementation planning for the whole project. We have to create the Web application using these technologies. As the outcome of this project, the teachers can be able to use it as per their requirements.

1.2 Purpose of the Project

The purpose of the project is to develop a web application that is a smart approach to subject-wise question bank preparation for the faculties. It will be helpful for the students to practice questions with different subjects. Also, teachers can create and make different sections according to the difficulty level of the question. We can give custom categorization, customization, and specific review system in this application. This is the business perspective of this project.

Who will be benefited from it?

- Faculties can refer to the Question bank for the purpose of setting the question papers for internal assessment as well as for their term-end examination.
- Teachers can also refer to the question bank for continuous evaluation of students. After completing one unit of any course, teachers can give some assignments to students to do based on this question bank

1.3 Problem Statement

Nowadays a huge part of the studying system and preparation for exams has become online based on this post-Covid situation. Teachers do not get the students for face-to-face checking their preparation every time. Students have to search for different tutorials based and quiz-based sites for solving the questions. For their preparation and knowledge testing, they have searched for subject-wise websites and questions, which sometimes became time-consuming before their busy schedule of exams. It will be very helpful and efficient learning for them if they can get all the subject-wise questions in one platform for the best results. Based on this problem scenario we have launched this project theme "Smart Question Bank", where teachers can create several questions for all the subjects of their course. The existing web application in this area have not been cost-optimized, our approach is to build them in an efficient manner.

1.4 Objective

The objective is to develop and launch a smart solution of subject-wise preparation with MCQs, where faculties will be able to create the questions from their end to check the students. This platform will encourage students to study and prepare efficiently for the exams. Faculties can refer to the Question bank for the purpose of setting the question papers for internal assessment as well as for their term-end examination. Teachers can also refer to the question bank for continuous evaluation of students. After completing one unit of any course, teachers can give some assignments to students to do by using this question bank. This 'Smart Question bank' aims to give the students surprise questions and to judge them properly that how prepared they are.

1.5 Structure of Project

1.5.1 Outline

The entire project scope has been divided into 3 primary phases:

Phase 1:	Question	creation	&	audit
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- Sign-up or login (authentication)
- Support the creation of the following question pattern:
 - o MCQ
 - o General question
- Map questions to the following type:
 - Objective
 - o Definition/Naming
 - Short Questions
 - o Explanation Based Questions
 - Questions on Reasoning (If applicable)
 - o Application Based Questions
 - Short Notes
- Support questions for the following difficulty level:
 - o Easy
 - Medium
 - o Hard
- Support questions to be tagged to multiple papers/subjects belonging to different academic programs.
- Support the following user roles:
 - Contributor
 - Reviewer
 - Administrator

- Peer & expert review of the questions submitted by other faculty members of the concerned academic department.
- Basic checks & validations

Phase 2: Creation of Question Papers

- Efficient UI mechanism for developing question papers for defined marking templates
- Save & export the question papers

Phase 3: Enhancements

- UI enhancements
- Dashboard functionality
- Additional checks & validations.

1.5.2 Project Flow:

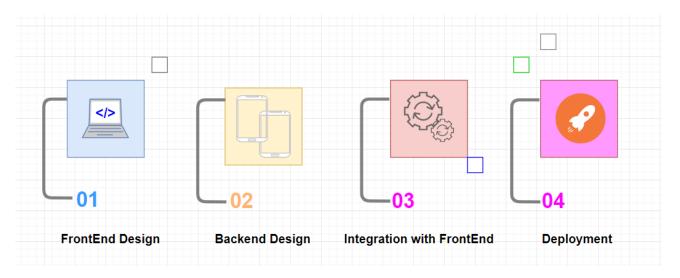


Figure 1: Project Flow

Literature Reviews

2.1 Literature Reviews of some of the previous related studies are provided below:

Sl.	Paper Title	Authors	Publication	Objectives
No.			Year	
01.	Automatic question generation and answer assessment for subjective examination[1].	Bidyut Das, Mukta Majumder, Arif Ahmed Sekh, and Santanu Phadikar.	2022	This project focuses on creating subjective questions, as well as a mechanism for evaluating the responses. Key terms from the course content are used to create the questionnaires (syllabus). Several forms of subjective questions are generated based on the keywords.
02.	Smart Paper Generator[2].	Anjali Sunil	2021	Teachers only need to upload the question bank for each subject to the smart paper generator. The question bank will be used to generate the question paper. This procedure is carried out automatically and with the assistance of a randomization algorithm.

03. Designing	an Pankaj Dwivedi	The design and the implementation
Adaptive	R. Tapar	of an automatic question paper
Question B	ank Shankar, B	creation and retrieval system for
and Ques	ion Meghana, H	the engineering sector are
Paper Genera	ion Sushaini, B. R	discussed in this work. The
Management	Sudeep & M. R	administrator and login module,
System [20]	Pooja	the question input module, the
		question retrieval module, and the
		evaluation module are the four
		modules that make up the system.
		A dynamic approach with low
		redundancy is used to construct the
		question paper. The question paper
		can be adjusted according to
		testing requirements, such as basic
		to advanced levels of difficulty
		because the entered question items
		are marked for their difficulty
		index. For objective questions, the
		evaluation module generates
		password-protected expert
		confirmed answer keys, while for
		subjective questions, it generates
		answer cues. The method may be
		able to meet the demand for
		confidential various sets of
		question papers with the same
		difficulty index for competitive
		engineering examinations or tests
		in a timely manner.

04.	Design and evaluation of an ontology-based tool for generating multiple-choice questions[3].	Cubric, M. and Tosic, M.	2020	The goal of this work is to explain and assess a tool built by the authors that produce test questions from any domain ontology using Bloom's taxonomy and strong pedagogical principles.
05.	Developing a	S. M. Saniul	2019	Provide a framework that can take
	Framework for	Islam Sani,		multiple-choice questions (MCQ)
	Online Practice	Rezaul Karim,		and written examinations. Create a
	Examination and	and Mohammad		database to record the questions
	Automated Score	Shamsul Arefin		and responses. The database's
	Generation[4].			questions are shown on a web
				page, with MCQ questions having
				answer options and written
				questions having text boxes. Used
				different forms of analysis of the
				written questions' replies to
				generate the scores for the written
				questions. However, to calculate
				the MCQ question scores, it simply
				compared the database answers to
				the user's replies.

06.	Bloom's	Yulia Timakova	2018	This work aims to develop an
	taxonomy-based	and Kinn Abass		automated examination question
	examination	Bakon		paper generation system (AQPGS)
	question paper			to replace academics' manual
	generation			methods. The system prototype
	system[5].			was created in Visual Basic and
				connects to a Microsoft Access
				database. It has multiple-choice,
				True/False, and open-ended
				questions. Using a keyword query
				and a random selection of
				questions, a mapping algorithm is
				integrated for automated
				categorization of open-ended
				questions according to Bloom's
				Taxonomy hierarchy. The
				generated paper can be saved and
				changed as a text document.
07.	Design and	Xin Wanga,	2017	Completes the test questions
	realization of test	Zhong Wangb,		management, the examination
	question bank	Wei Huangc,		paper management, and the
	database	Guanqi Wen, and		student examination function
	System[6].	Shaolei Zhangd		which the examination question
				bank system request, but also has
				consummated and improved the
				function of the test question bank
				system.

08.	Proposed Bio-	Hussein Y.	2017	It provides a shared architecture
	authentication	AbuMansour		for a Bio-authentication technique
	System for			based on the authorized person's
	Question Bank in			fingerprint as a nested internal
	Learning			security level for accessing the
	Management			question bank. We feel it is an
	Systems [19].			innovative approach to many
				common hacking scenarios, such
				as leaving authorized access with
				high privileges unattended for a
				variety of reasons, which makes it
				easy for unauthorized users to
				access the question bank. In the
				event of the first level's
				(Password/username) breaking,
				this unique approach is rapidly
				developing fingerprints as data in
				the internal information security
				progress of user authentication.
09.	Development and	Parthasarathy, M.	2016	The purpose of this project was to
	Validation of	and		create a Web-based Past
	Web-Based	Ananthasayanam,		Examination Question Bank
	Question Bank	R.		(WPQB) for selected subjects with
	and Evaluation of			customized search capabilities,
	Its Utility among			and the website was then reviewed
	Students and			to validate its usefulness among
	Teachers[7].			students and teachers.

10.	A taxonomy	John R.	2015	Banks of multiple-choice
	assessment and	Dickinson		questions, and the taxonomies into
	item analysis of a			which the questions are classified,
	retailing			e.g., by difficulty and question
	management			type.
	multiple-choice			
	question bank[8].			
11.	Medical school	Adrian C.C.	2014	Students produced their own
	2.0: How we	Gooi; and Connor		multiple-choice questions (MCQs)
	developed a	S. Sommerfeld		using self-study tools, and then
	student-			reviewed each other's questions in
	generated			small groups. Selected questions
	question bank			were discussed with the entire
	using small group			class. The instructor then reviewed
	learning[9].			all of the questions and added them
				to a question bank that students
				may use for formative learning.
12.	An algorithm for	Vaibhav M. Kale,	2013	We propose the creation of an
	question paper	and Arvind W.		algorithm to generate a question
	template	Kiwelekar.		paper template that meets the
	generation in			aforementioned conditions in this
	question paper			paper. The algorithm is
	generation			demonstrated in the paper utilizing
	system[10].			four restrictions based on Bloom's
				taxonomy: question paper style,
				syllabus coverage, difficulty level
				coverage, and cognitive level
				coverage.

13.	Design of	Vijay Krishan	2012	Developing an adaptive question
	adaptive question	Purohit; Abhijeet		bank management system that
	bank	Kumar; Asma		automatically selects questions
	development and	Jabeen; Saurabh		from a large database (question
	management	Srivastava; R H		bank) and represents the question
	system[11].	Goudar;		model based on the question paper
		Shivanagowda;		designer's inputs or criteria (QPD).
		and Sreenivasa		The question modeling process
		Rao		will be ensured by the idea map
				combined with the question bank
				(question database) based on the
				degree of specific criteria such as
				Bloom's Taxonomy, difficulty
				level, and so on.
14.	A framework for	Horst Liske	2011	The paper discusses a
	automated			programming framework for
	generation of			creating queries from the internet
	examination			help resources automatically. It
	questions from			also provides tips and
	web based			recommendations to help you
	semantically			locate the proper solution.
	treated search			
	results			

Technology

3.1 Introduction

The technologies that have been used in this project include ReactJS for Front-End design. It is very flexible and easy to make interactive web pages with React. We also use Redux and Node.JS Express. Material UI has been used for page design. MVC Framework also has been used. And MariaDB for the backend database.

3.2 Description

3.2.1 ReactJS

React is an open-source as well as flexible, and also declarative JavaScript library that is easy to use for developers to build interactive, scalable, simple, and fast frontend interfaces for single-page or multi-page web apps. React makes it very easy for developers to create attractive UIs. It creates basic views for every state of our project, and react will render and update the appropriate components as our data changes. Declarative views of it improve the predictability and the debuggability of the code. React composes encapsulated components that handle their own state to create complex and complicated user interfaces. We can simply transmit rich data through your app and keep the state out of the DOM since component logic is written in JavaScript rather than templates. Because we don't make assumptions about the rest of your technology stack, you can use React to build new features without having to rewrite old code. Node.JS can also be used in React to render on the server and React Native to power the mobile applications.

We use React instead of HTML and CSS because –

- React has been seen as being faster than HTML. We can use declarative HTML syntaxes directly in the JavaScript code with the ReactJS.
- o It allows us to create separate and smaller code components and files that are easy to execute.
- o React creates a more responsive UI (user interface) that is very easy for developers.
- o It adds dynamic features to the project using JavaScript, which is very helpful.
- React is not only good for its performance but also its clear design is highly test-friendly, which means the applications are highly testable. It can be easily supervised from the functions, triggered outputs and events, etc.

• We just have to import React libraries. JSX is the special syntax that looks like the HTML and converts the API call of React and it renders the HTML.

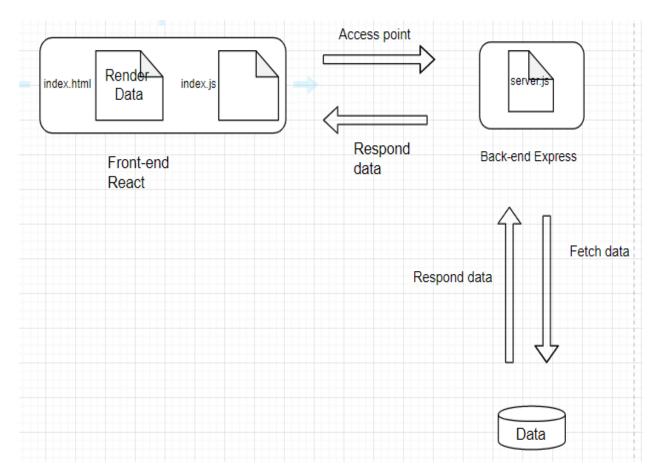


Figure 2: React Architecture

3.2.1.1 Virtual Document Object Model (DOM):

React's the lightweight counterpart of the Real DOM is the Virtual DOM. Real-world DOM manipulation takes much longer than virtual DOM manipulation. Virtual DOM just updates that object in the real DOM when its state changes, not all of them. VDOM is updated when the state of an object in a React application changes. Then, rather than updating all of the items in the actual DOM, it compares its prior state and changes only those in the real DOM. Things can move more swiftly as a result of this, especially when compared to other front-end technologies, which must update each item even if just one object in the web application changes.

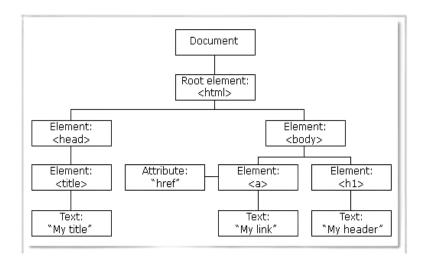


Figure 3: DOM of a Webpage

3.2.1.2 React-router

React-router is a navigation library for React applications. React-router-dom and React-router-native are both included in this collection. The first is for web application navigation, and the second is for mobile application navigation (React Native). It will be possible to traverse the web application from one page to another using this library, regardless of where we are in the application. It will be possible to construct routes and then follow one of them using the link.

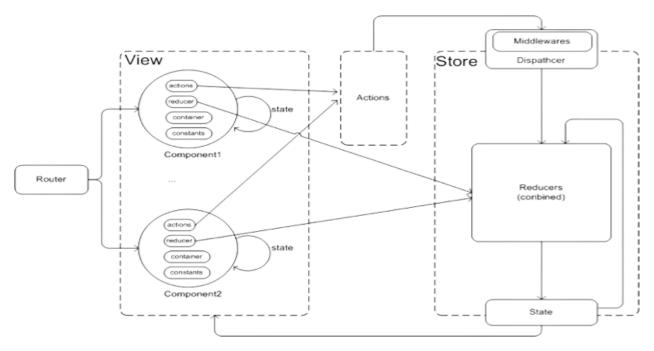


Figure 4: React router

This is a UI MVC architecture chart. The view is React class component with its own states, constants, actions(events), reducers (event handlers), and containers (connect to Redux global store). The model and controller are the Redux store, which acts as a global centralized manager, dispatching actions and executing reducers. The state change will in turn result in React component being be updated.

3.2.2 Redux

Redux enables you to create apps that act consistently across environments (client, server, and native) and are simple to test. The ability to centralize your application's information and logic allows for powerful features like undo/redo, state persistence, and more. The Redux tool makes it very simple to see where, when, why, and how the state of our application has been changed. The design of Redux allows us to notice the changes, "time-travel debugging," and even it sends total fault reports to the server. It can be used with any UI layer and Redux has a wide ecosystem of addons to customize it as per our requirements. Redux aids app scaling by offering a logical mechanism to handle the state via a one-way data flow architecture. The React Redux concept is very clean and straightforward. It joins the Redux store, checks if the data our component requires has changed, and then re-renders our component.

We use React-Redux because -

- o The official UI bindings for the react applications are said as React-Redux. It's maintained up to date with any API updates to guarantee that your React components work as they should.
- o It promotes the use of React architecture.
- Many speed improvements are implemented internally, allowing components to re-render only when necessary.

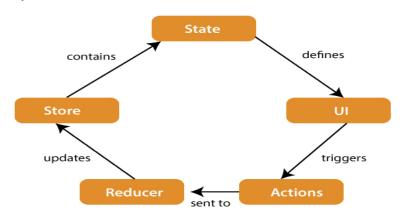


Figure 5: React Redux Architecture

3.2.3 Material UI

Material is a flexible set of components, guidelines, and tools that enable user interface designing very easily and best practices. Material Design is a design language developed by Google for Android that supports touchscreen touch interactions with cue-rich features and natural movements that mirror real-world items. Material Design has been widely accepted by the design community, and it can now be seen widely on websites and applications which aren't built by Google. In simple words, the Material Design using is very efficient now for both the desktop and mobile applications. Material-UI is a modern package that allows developers to use and import multiple components efficiently in our React apps to construct a user interface. As the developers do not have to rewrite everything from the beginning, this saves a lot of time for the project. Material-UI widgets are highly influenced by Google's user interface design concepts. As a result, it is simple for developers to create aesthetically appealing apps. Currently, the integration of the Material UI library and React.js projects take whole things nowadays to a very new level. Some frontend frameworks are poorly documented, making it difficult to work with them. Material UI, on the other hand, provides extensive documentation that makes it simple to traverse through the framework. Material UI is updated on a regular basis to keep it current. Its components of it are similar in design and colour tones, that result from an aesthetically pleasing web application or any webpage.

3.2.4 MVC Framework

The Model-View-Controller (MVC) architecture pattern has three logical components: model, view, and controller, and it divides any application development into these parts. Each of these three components is designed to handle the specific parts of application development. MVC is an industry-standard very popular web development framework in modern technologies for developing scalable and flexible projects. All the data-related logic that the user engages with is represented by the Model component. This might be the data that is being transmitted between View and Controller components or any other data related to the business logic. A Customer object, for example, will get the customer information from the database, change it, and either update or output the data back to the database. All of the UI logic of the applications is handled by the View component. The Customer view, for example, will construct all of the UI components that the final user interacts with, such as text fields, dropdowns, and so on. The controllers serve as the link between Model and View components, processing all business logic and incoming requests, manipulating data using the Model, and

interacting with Views to produce the final output. The customer controller, for example, will handle all the inputs and interactions from Customer View and will use the Customer Model to update the database. And Customer data can be seen using this same controller.

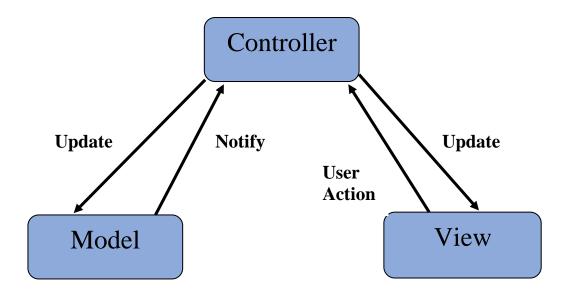


Figure 6: MVC Framework

3.2.5 MariaDB

MariaDB is an open-source relational database management system (DBMS) that may be used as a drop-in replacement for the popular MySQL database. It was built as a MySQL software fork by the people who were engaged in the development of the original database. It is a SQL-based database that allows ACID-style data processing with assured atomicity, consistency, isolation, and durability. The database also supports JSON APIs, concurrent data replication, and various storage engines, among other things. It is the most powerful open-source relational database, with support for current SQL and JSON, Oracle Database compatibility, high availability, and robust security. It is a database that may be used as a regular database, a distributed SQL database, or a data warehouse. In a wide range of applications, from banking to the internet, it converts the data into structured information. MariaDB is utilized because it is fast, scalable, and resilient, with a rich ecosystem of storage engines, plugins, and other tools that make it highly adaptable for a wide range of use cases. It was originally created as the upgraded, drop-in replacement for the MySQL database. It is the relational database that uses SQL interfaces to retrieve the data. It has been created as open-source software. GIS and JSON capabilities have been added to MariaDB in recent editions.

3.2.6 Node.JS Express

Express is a Node.js web application framework that offers a comprehensive range of functionality for both online and mobile apps. Using a variety of HTTP utility methods and middleware, you can quickly and easily build a powerful API. Express adds a thin layer of basic web application functionality without obscuring the Node.js capabilities you already know and love. Express is the foundation for several prominent frameworks. Express is a Node.js web application framework that includes a wide range of features for developing web and mobile apps. It makes it easier to create Node-based Web apps quickly.

Some of the popular key features of the Express framework are listed below:

- o It Allows middleware to reply to HTTP requests to be built up.
- o It Defines a routing table for doing various actions based on HTTP Method and URL.
- It Allows us to render the HTML pages dynamically by supplying the variables to the templates.

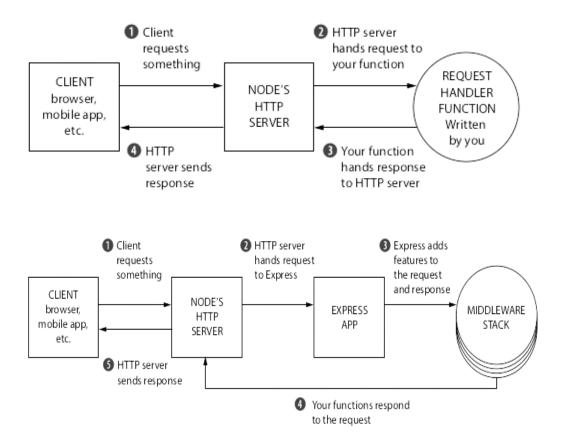
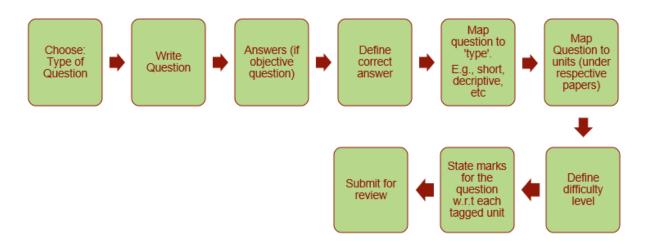


Figure 7: Node.JS Express

Methodology

4.1 Questions Creation:

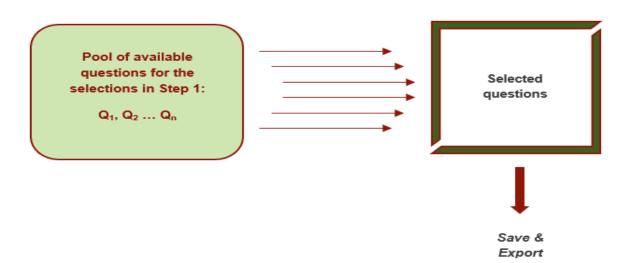


4.2 Creating Question Paper

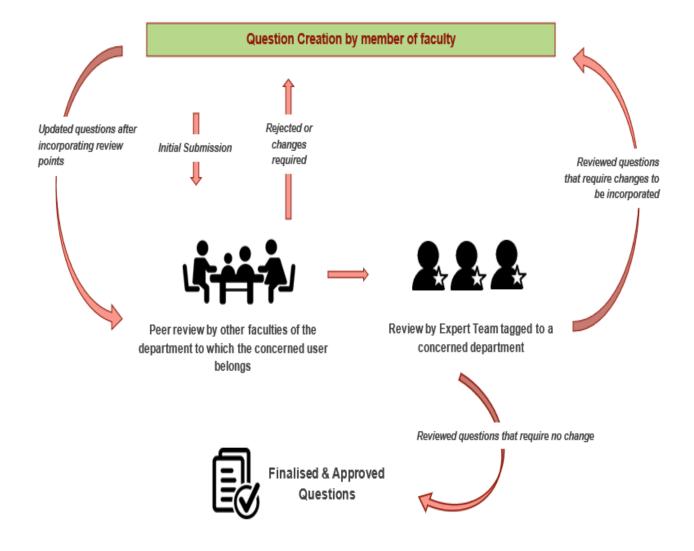
Step - 1



Step - 2



4.3 Review Process:



It supports three types of users - teachers, reviewers, and admins. Two different types of Dashboards will open for teacher's login and reviewer login on the other side. After successful log-in or sign-up teachers can create questions by selecting the type of the questions and the difficulty level of the questions. Then they can create the question paper subject-wise. Then the question papers should be reviewed and approved by the other faculty members of the respective department of the institute. Once they will approve the questions set, the questions will be published.

Software and Hardware requirements

5.1 Software and Hardware:

The software and hardware requirements of this project are –

- Operating System: Windows 7 and above
- O Language: Html, CSS, JavaScript
- O Technology Stack:
 - 1. MariaDB,
 - 2. ReactJS,
 - 3. Node.js Express,
 - 4. MVC Framework,
 - 5. Material UI
- O Browser: Any browser and IE 8 and above.
- O Database Language: MariaDB
- O Processor: A single-core 2GHz processor
- O RAM: 512 Mb and above

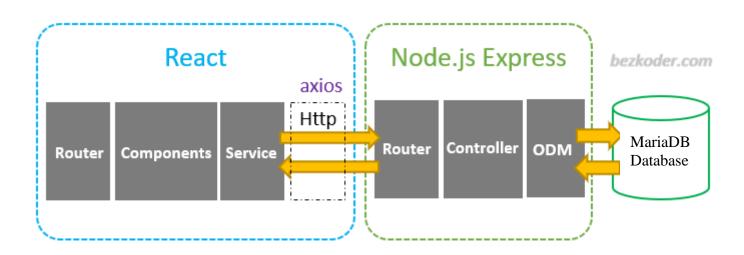


Figure 8: Software requirements

Implementation and results

6.1 ER Diagram:

An entity-relationship diagram (ERD), often called an entity-relationship model, is a graphical depiction of relationships between things, people, locations, concepts, events, etc in an information technology (IT) system. ER diagrams are widely used to represent and make relational databases, both in terms of logic and business rules (in the logical data model) and the specific technology to be employed (in the physical data model.) Real-world things are represented using an ER model.

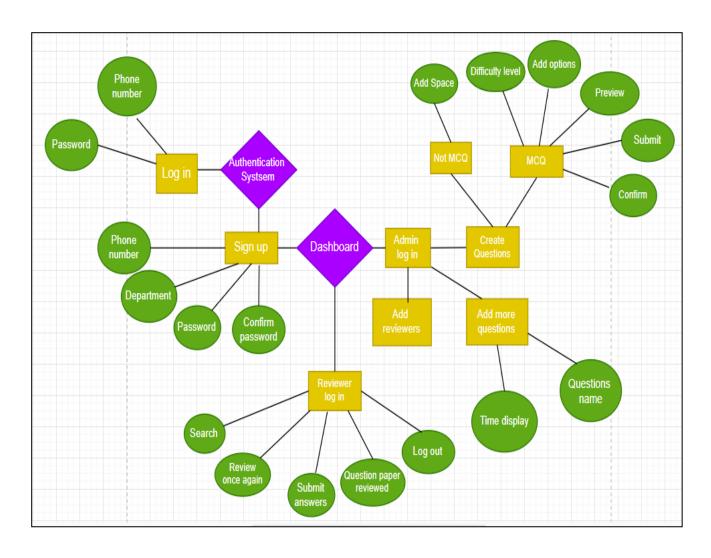


Figure 9: ER Diagram for Smart Question Bank

6.2 Description:

Step 1:

First, there is an authentication system for any person. It will show two options –

- Log in
- Sign up

Step 1.2:

If sign up has been chosen it will ask for –

- Phone number
- Department
- Password
- and finally confirm the password

and if login is chosen it will ask for only

- Phone number
- Password

Step 2:

Then the Dashboard page will open.

It may be three types of persons log in

- Admin Log in
- Reviewer Log in
- Teacher login

Step 2.1:

For teachers, they can see the following options -

- Add reviewers
- Create Questions
- Add more questions
- Level of the difficulty

Step 3:

In the 'Create Question' section they can have the following parts -

• Create questions

- Then Submit
- Preview
- Confirmation button

Then they will be back to the Dashboard page.

Step 4:

In the 'Add more Questions' sections, there will be the following options -

• Question name

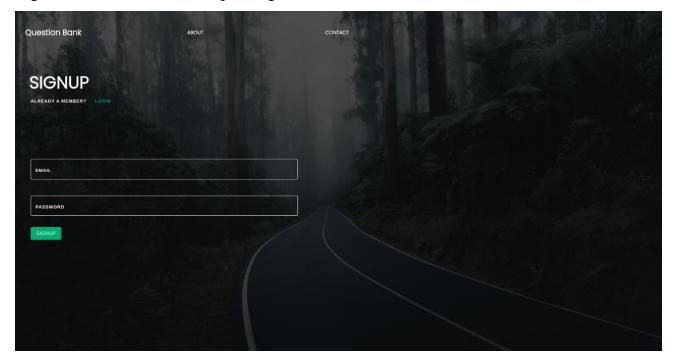
Step 5:

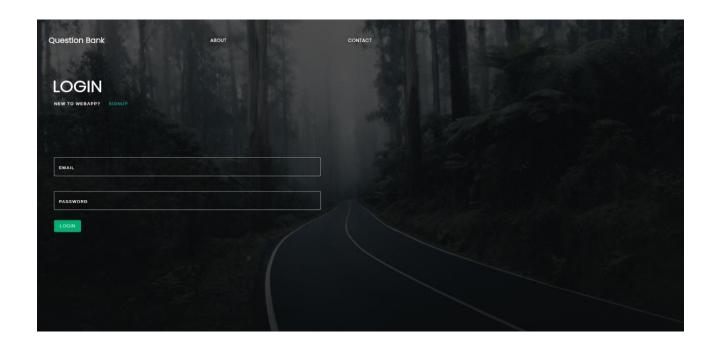
And for the reviewer to log in they can view the different Dashboard. They can have the following options –

- Search button
- Review once again
- Log out

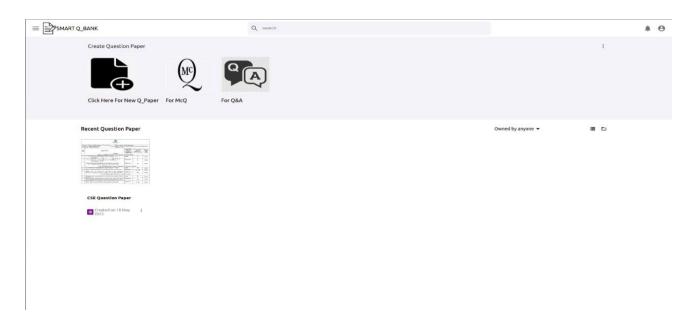
6.3 Results

Sign-On feature with the help of login (authentication)





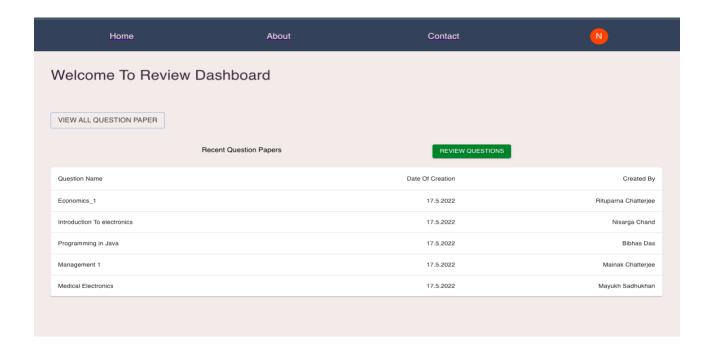
Support the following user roles:



Contributor

Support the creation of the following question pattern:

- MCQ
- General question

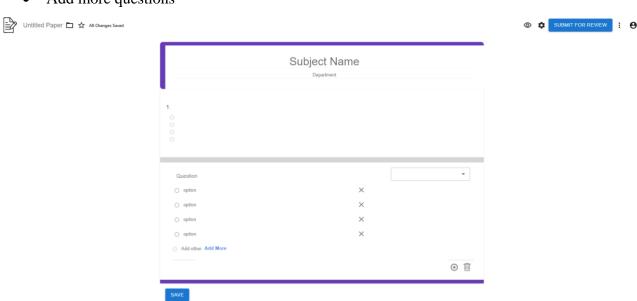


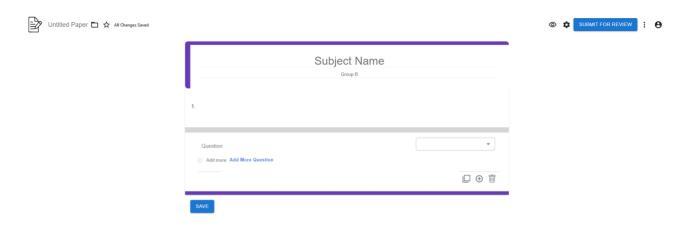
Reviewer

Peer & expert review for questions submitted by other members of faculty belonging to the concerned academic department.

For teachers -

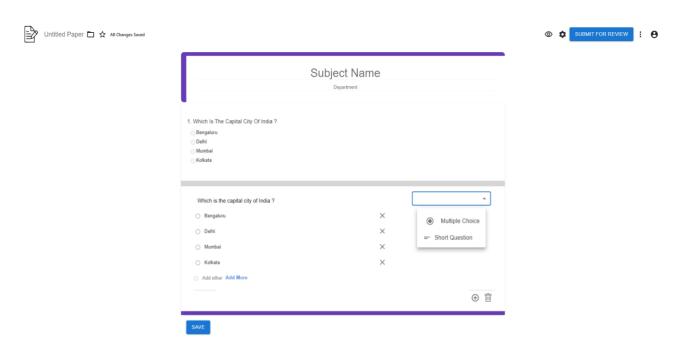
- Create Questions
- Add more questions





Map questions to the following type:

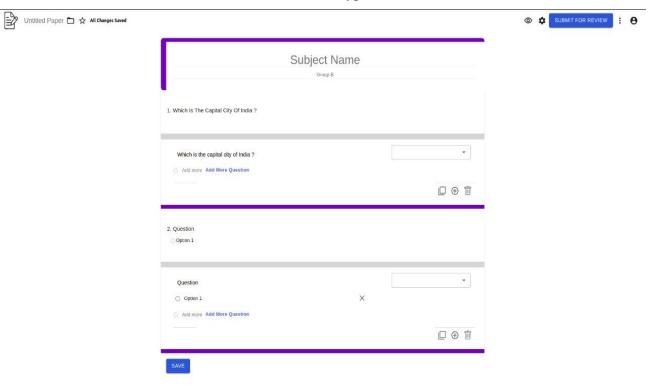
- Objective
- Short Questions
- Explanation Based Questions



 Support questions to be tagged to multiple papers/subjects belonging to different academic programs.



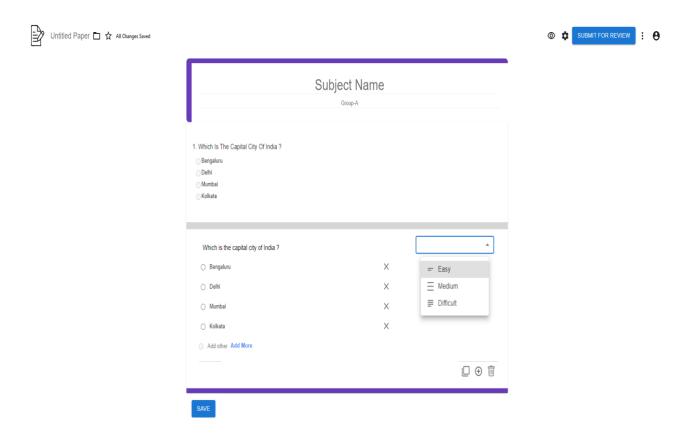
For MCQ Types



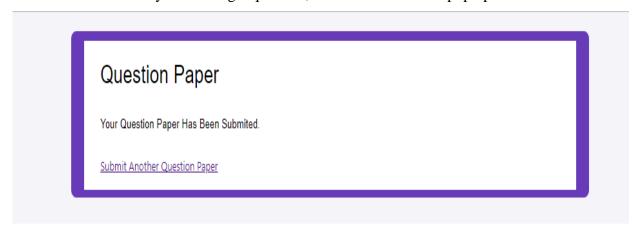
For Subjective Types

Support questions for the following difficulty level:

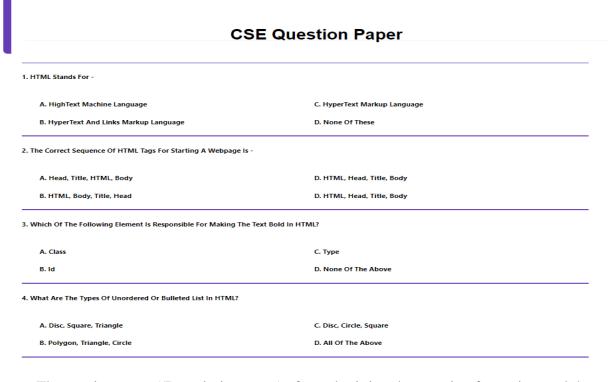
- Easy
- Medium
- Hard



• After Successfully submitting a question, this notification will pop up



 The preview page after submitting the question for review (MCQ) and the teacher can view it.



• The preview page ((Description types) after submitting the question for review and the teacher can view it.

CSE Question Paper

1. HTML Stands For
2. The Correct Sequence Of HTML Tags For Starting A Webpage Is
3. Which Of The Following Element Is Responsible For Making The Text Bold In HTML?

4. What Are The Types Of Unordered Or Bulleted List In HTML?

5. Which Of The Following HTML Attribute Is Used To Define Inline Styles?

Conclusion

In this project, we have created a web platform where teachers can create several questions like multiple choice questions, long answer type questions, etc. for checking the subject-wise preparation of students. From a proper analysis of the positive points and constraints on the component and research, it can be safely concluded that this product is highly efficient for creating questions. This application will work properly and meeting to all user requirements. This component can be easily accessible to the faculties, reviewers, and admins. Most of the existing solutions do not cost estimated. So, in all ways, we can conclude that this project is viable both technically and economically and it will have high IT demand.

Future Work

We will do the basic Artificial Intelligence (AI) implementation in the near future which will help the whole process to be used easier. In the future, we will create question papers according to the matrix. And we will include Bloom's taxonomy in this project.

We will research the users of this web application along with their demands and any problem they are facing, and we will improve it and make it more efficient.

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