



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)



Team EXECUTABLES, 27204

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College ID: 80254

PS No: RK783

Idea ID: 27119

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QUESTION BANK GENERATOR

Problem Statement

To be able to graduate to objective-type questions for one semester of online board exams, a question bank of at least 5000 questions will be required for each subject. Setting question papers for the exams is a complicated task. Can you think of a Crowd Sourcing model where questions are set by large number of anonymous stakeholders thereby creating a large question bank? These questions can be vetted by experts before freezing the same in the question bank. The actual question paper can be set through an automated system.

Challenges in Question Paper Generation



Subject Matter Expert

SMEs need to study the syllabus of a particular subject and define the question bank pool.

Question Paper Design

Paper setter needs to select a random set of questions from the pool to define the question paper.



Moderator and CoE

Moderator needs to validate the paper. The Controller of Examination needs to monitor all of these activities.

Limitations of Current System

Repetition and Bias

There might be repeated questions in question papers due to the professor's personal inclination towards them.



Manual Management

CoE monitors all streams, subjects and semesters for all activities. Manual management of this job is difficult



Tedious Job

Defining a pool of questions, i.e. question bank is a tedious job and requires input from Subject Matter Experts

Security Concerns

Security can be compromised if leverage over the person responsible for generating question papers is obtained



Project Overview

- QBAG: Question Bank Generator uses a crowdsourcing approach to create a question bank of objective questions and offers academicians and paper setters an interface to create questions and papers using our automated and reliable system.
- Contributed questions are reviewed by experts as well as put through a series of automated checks.
- Questions contributed by verified teachers/faculty are assigned a badge (special status), but are still subject to expert verification
- The questions can be generated based on desired criteria like the board, subject, marks, difficulty, topic, medium, and language, etc.
- The final question paper can be exported to PDF.

Key Features



Clean UI

The interface is user-friendly, responsive and intuitive for efficient navigation to ensure ease of access.



Crowdsourcing

Enables all users to contribute to gather multiple viewpoints and diversify the archive of questions



Easy Management

Adding, Uploading, and Verification of questions through a series of automated checks, freeing user from manual job

Key Features



Anonymity

User details are hidden. Questions posted by Verified teachers will have a special status (verified badge).



Automated Validation

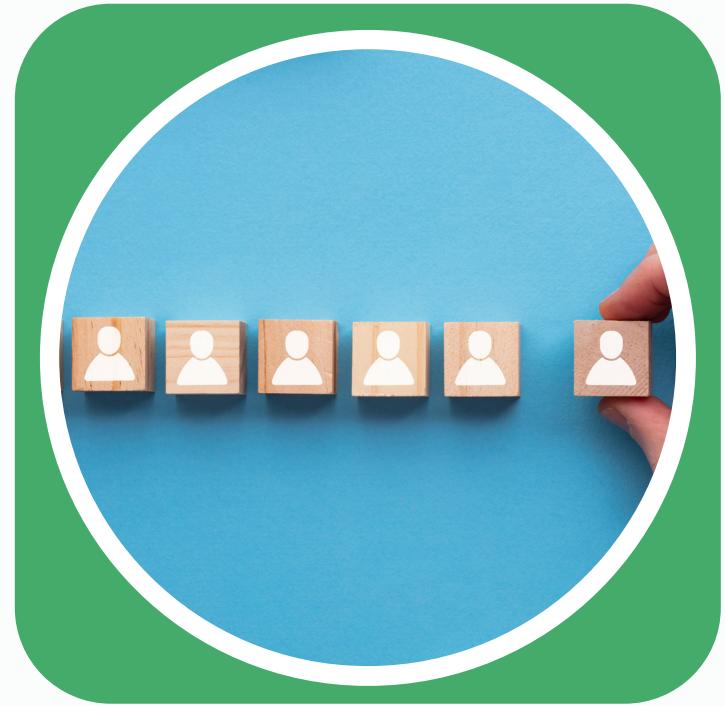
Questions are verified by an automated approach using ML, as well as an manual vetted by experts



Paper Generation

Question Paper is generated automatically based on filters adjusted by the teacher

Key Features



Filtering Questions

Questions are generated based on the certain filters that will help users pinpoint the set of questions.



Multilingual

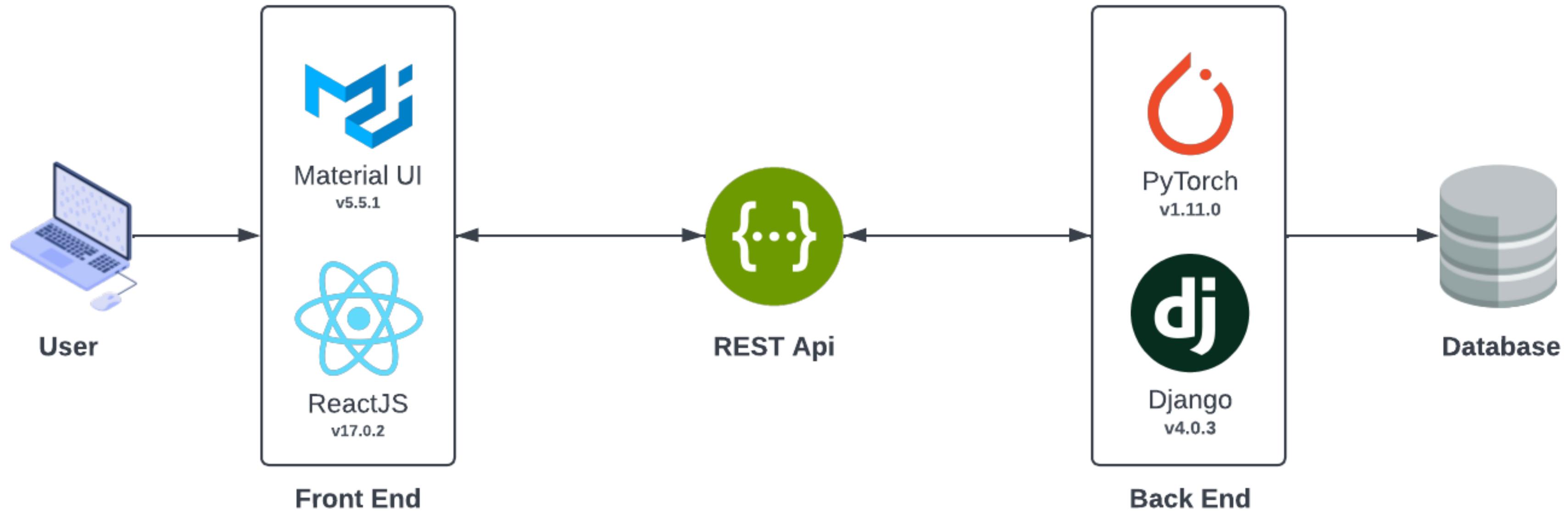
Multilingual support to serve users in more than one language. Support for 22 languages are added.



Saving Papers

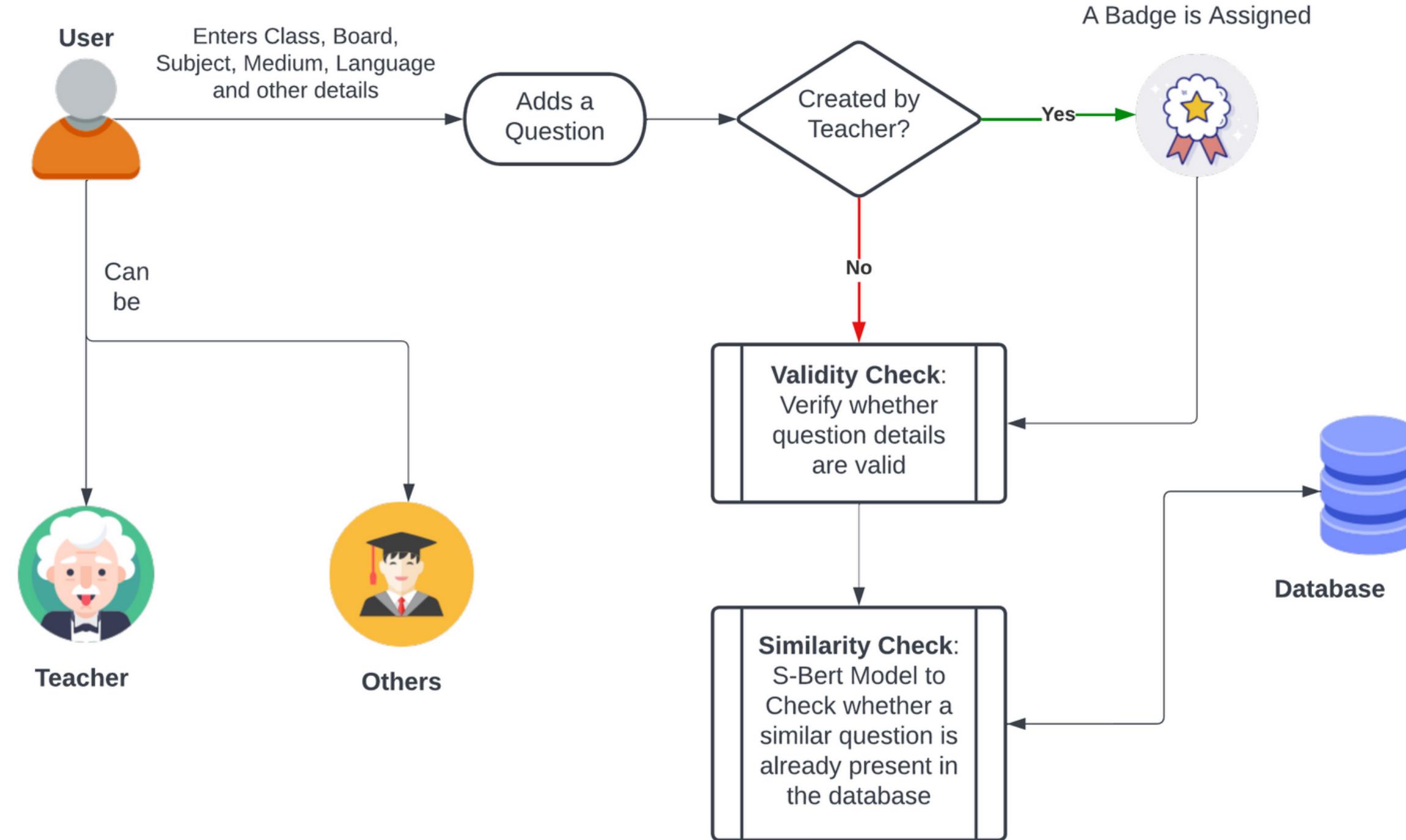
Teachers can download generated papers in PDF or Print format. These papers are saved and can be accessed in the future.

TECHNOLOGY STACK



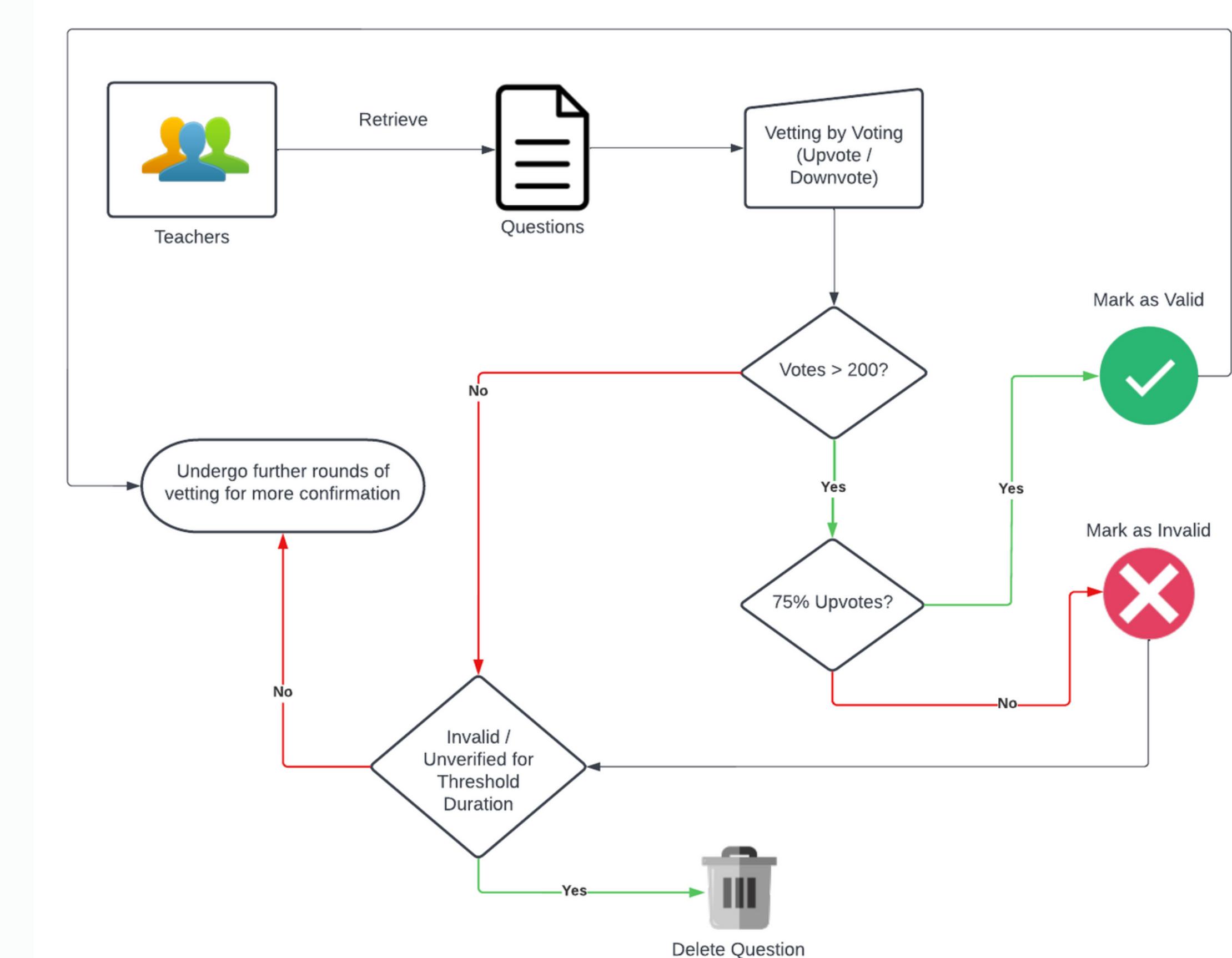
WORKFLOW DIAGRAM

CREATING QUESTION BANK



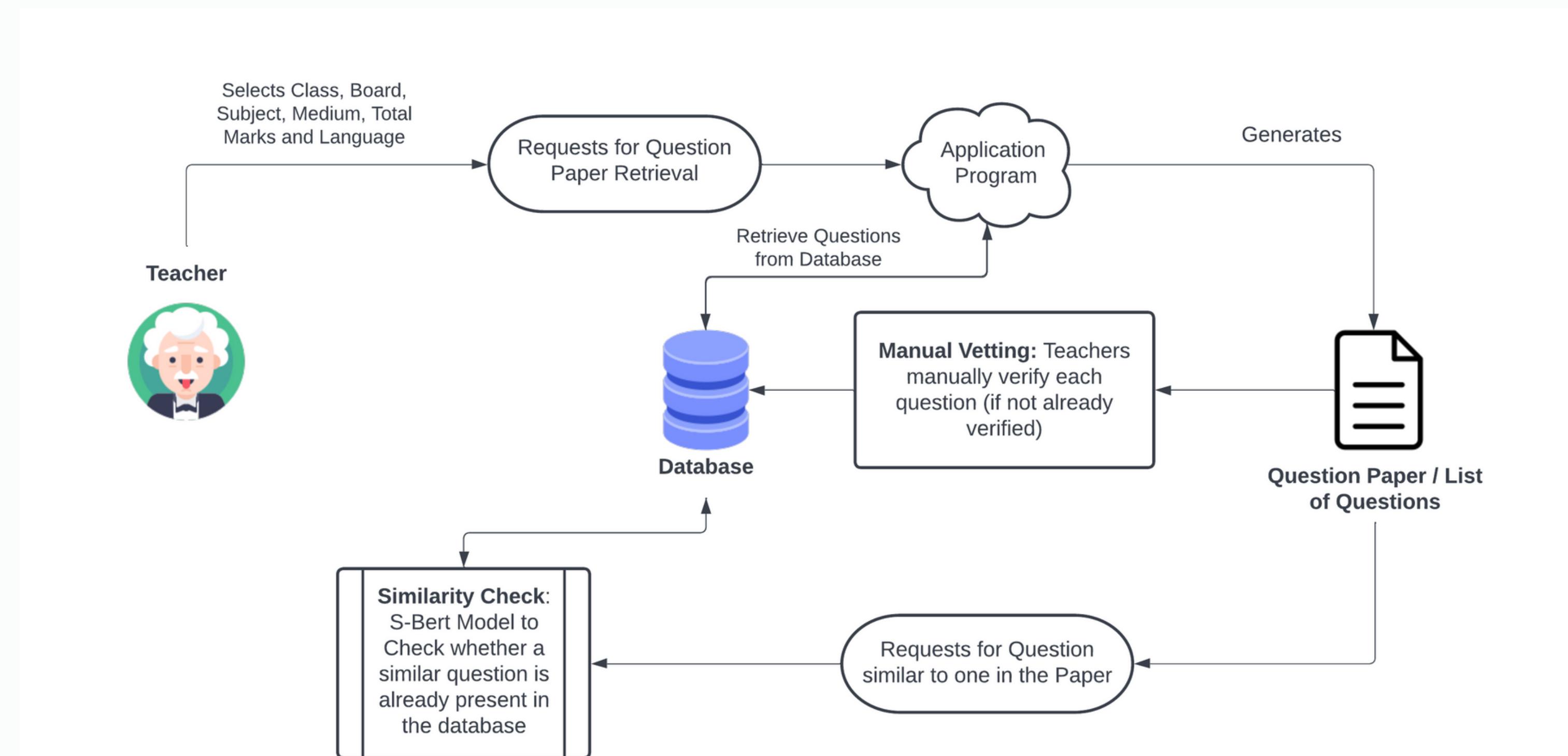
WORKFLOW DIAGRAM

- EXPERT VETTING

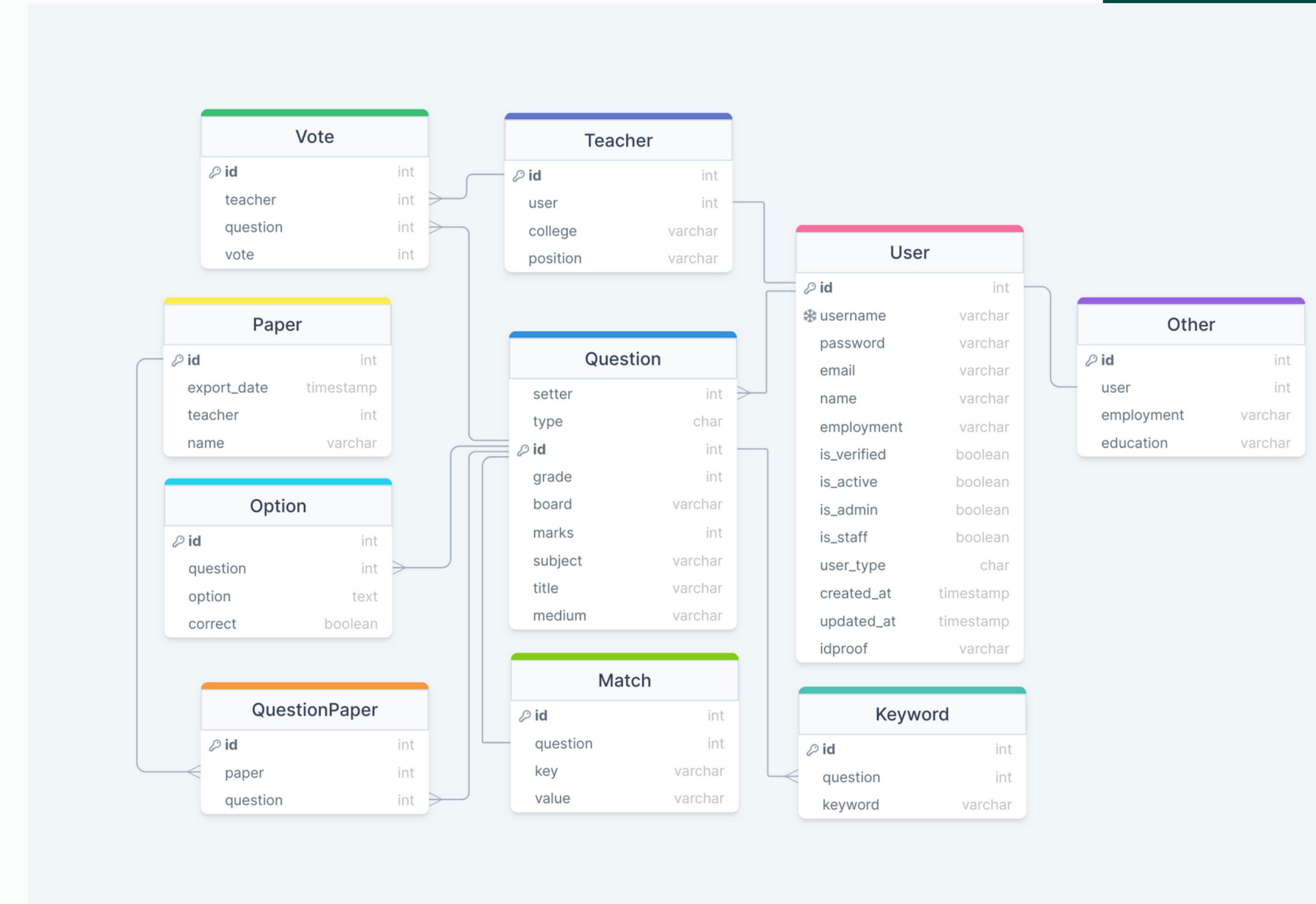


WORKFLOW DIAGRAM

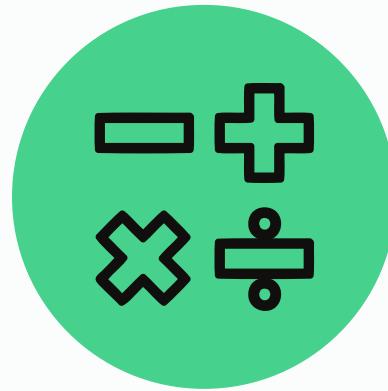
GENERATING QUESTION PAPER



DATABASE DESIGN

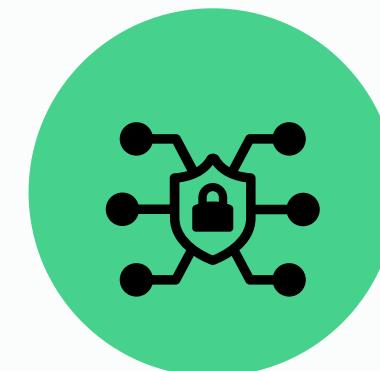


Future Roadmap



LaTeX

LaTeX Implementation for chemical and mathematical equations.



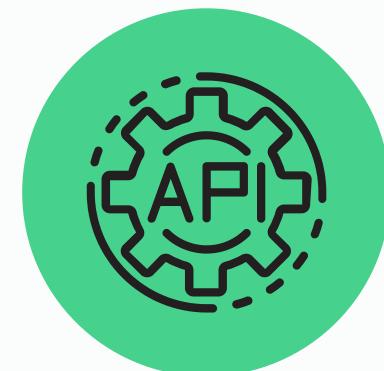
2-Factor Auth

Two Factor Authentication for verification of professionals.



Verification

Verification through data extraction from ID.
EDU account exclusivity



API-based Model

Conversion of S-Bert Similarity Model to an API Service.



Examination

Enable teachers to share question paper as a test link to conduct online examinations.

Our Team



**Prof. Era
Johri**

Mentor



**Anurag
Singh**

Front End Developer



**Viraj
Patidar**

Full Stack Developer



**Umang
Thadani**

Back End Developer



**Naman
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Machine Learning



**Atharva
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Back End Developer



**Dishika
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Front End Developer

THANK YOU

