Customized Learning Assessment Generation

April 2024

1 Problem Statement

With the implementation of National Education Policy 2020, and shift of focus towards holistic education, our traditional textbooks, teaching methods and assessment strategies are becoming obsolete.

The teaching methods need to incorporate external factors like background, students' interests, practical application, moral responsibility in addition to the course content to ensure a holistic understanding of any topic. Even the assessments should not only test textbook knowledge but also test how well the student can apply it to real-life scenarios, enabling them to relate to the subject in an interactive space.

Though the above scheme has promising advantages, designing such questions is very time-consuming and demanding for the instructor.

This gives rise to the need of an automated customized assessment generation software that can create relevant, enjoyable and brain-teasing assessments for the students with minimum effort.

2 Approach Towards Problem

With the increasing need for individualistic attention to student learning, we make the use of advancements in technology to assist teachers in these tasks.

We leverage Large Language Models (LLMs) alongside the MERN Stack to aid teachers in creating customized assessments tailored to judge comprehension levels of individual students.

3 Designing The Application

The web application has mainly 3 pages:

- New Assessment Page
  This is the landing page of the website. It consists of a form where the user can enter topic, number of questions, question type, context keywords and upload relevant PDFs to be referred to for assessment generation. After filling the form, the user can click on Submit button to view the assessment generated.

- Edit Assessment Page
  When the assessment is generated, the user is redirected to this page. Here the user can modify any of the questions or sample answers to improve the quality of the assessment. On clicking the save button, he is asked whether he would like to overwrite the changes or save as a new copy. According to the option selected, the assessment is saved to the database. There is also an option to export it as docx or pdf.

- History Page
  On this page, all the assessments generated on the web application are displayed with their respective date and time of generation. The user can click on the name of any of these and view the assessment (in its latest version), make changes to it, save it and export it as PDF/docx.

4 Demonstrating The Flow Of Application

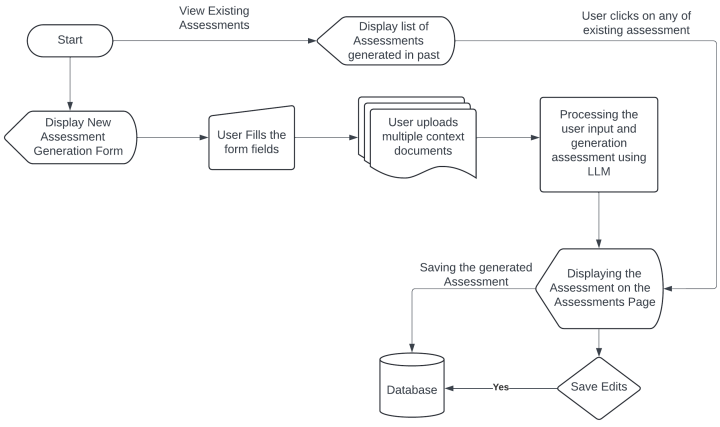

Figure 1: Workflow of Application

5 Glimpse Into The UI

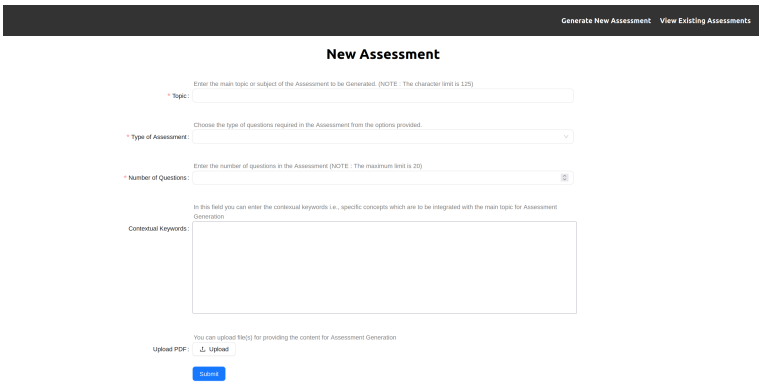

Figure 2: New Assessment Generation Page

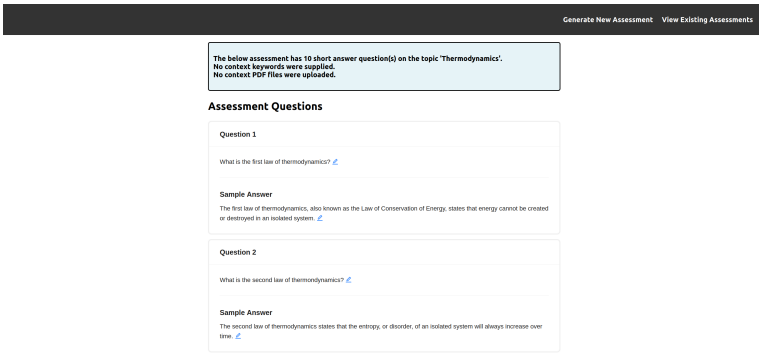

Figure 3: Assessment Page for Short Answers

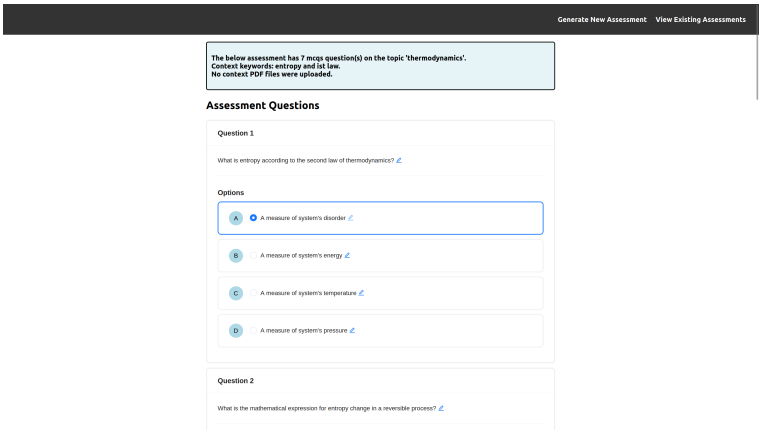

Figure 4: Assessment Page for MCQs

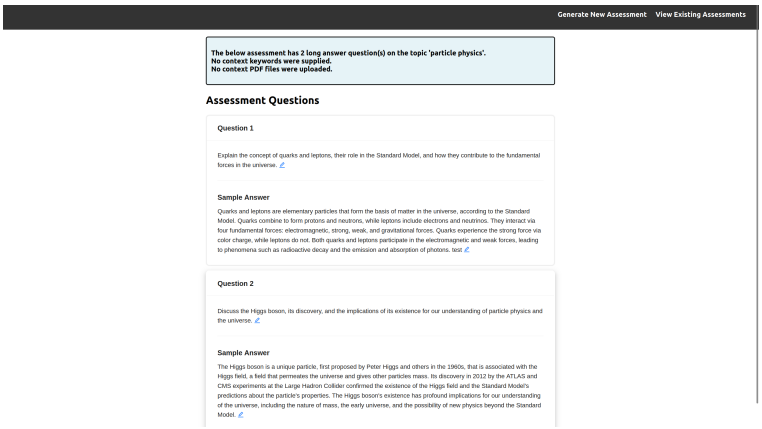

Figure 5: Assessment Page for Long Answers

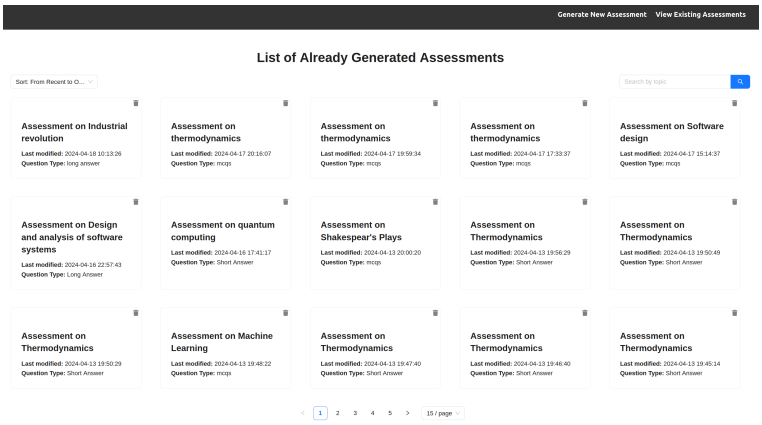

Figure 6: Existing Assessment Page