Project Report: AI-Based Math Polling App

This project is an AI-powered app designed to help second-grade students improve their math skills through interactive polling. The app generates math questions that become progressively harder as the user answers correctly, offering a dynamic learning experience. The questions cover a range of second-grade level math concepts, including basic addition, word problems, and simple multiplication. My goal was to create an AI tool that will teach and help students build confidence in their math skills while gradually increasing the challenge.

The key features of the app include dynamic difficulty, math problem generation, and user feedback. The difficulty of the questions changes based on the user's performance, making sure that the learning process remains a challenge. Users also receive immediate feedback after each question, telling them if they were right or wrong, allowing them to learn from their mistakes.

I was able to improve my experience in full-stack web development by using Flask. I learned how to effectively manage routes, templates, and user interactions within a web application. One of the most important skills I developed was integrating the OpenAI API, which allowed me to generate dynamic math questions based on user input. I was also able to sharpen my problem-solving abilities by troubleshooting issues in the backend code and the integration with the API, especially when facing unexpected challenges with OpenAI.

I faced many challenges developing the project but the biggest one was the integration of the OpenAI API. Although I am on a paid OpenAI plan and have made sure to stay within the usage limits, I faced continuous issues where I was unable to make API calls. I received error messages stating that I had exceeded my quota, despite my usage being within the limits.After reaching out to OpenAI's support team multiple times, I was unable to resolve the issue unfortunately. This prevented me from presenting a demo.

The project does have some additional features and improvements that can be added. One key feature to add would be to increase the scope of the program. What I mean by this is catering to more than just second grade mathematics. This would allow a wider range of users and students. Another important improvement would be the addition of user profiles, so that users can track their individual progress and see their strengths and weaknesses.