

**Project idea:** The Virtual Classroom Engagement Tool

**Objective and description:** The Virtual Classroom Engagement Tool is a web-based or mobile application that enhances student engagement in online learning environments. The tool will provide features such as live quizzes, interactive polls, Q&A sessions, and simple AI-driven feedback to encourage student participation during virtual classes.

**Requirement Analysis:**

- Real-time quizzes and polls.
- Q&A section where students can ask questions.
- Simple analytics dashboard showing participation rates.

**Technology Stack Frontend:**

- React.js or Vue.js for the web app; Flutter or React Native if we want to make a mobile app.
- Backend: Node.js with Express.js or Python with Flask/Django for the server-side.
- Database: MongoDB (NoSQL) or PostgreSQL (SQL) to store user data and interactions.
- Real-Time Interaction: Socket.io for WebSockets to manage live data flow.
- AI-Driven Feedback: Basic NLP models (e.g., using Python libraries like NLTK) for analyzing student feedback and providing suggestions.