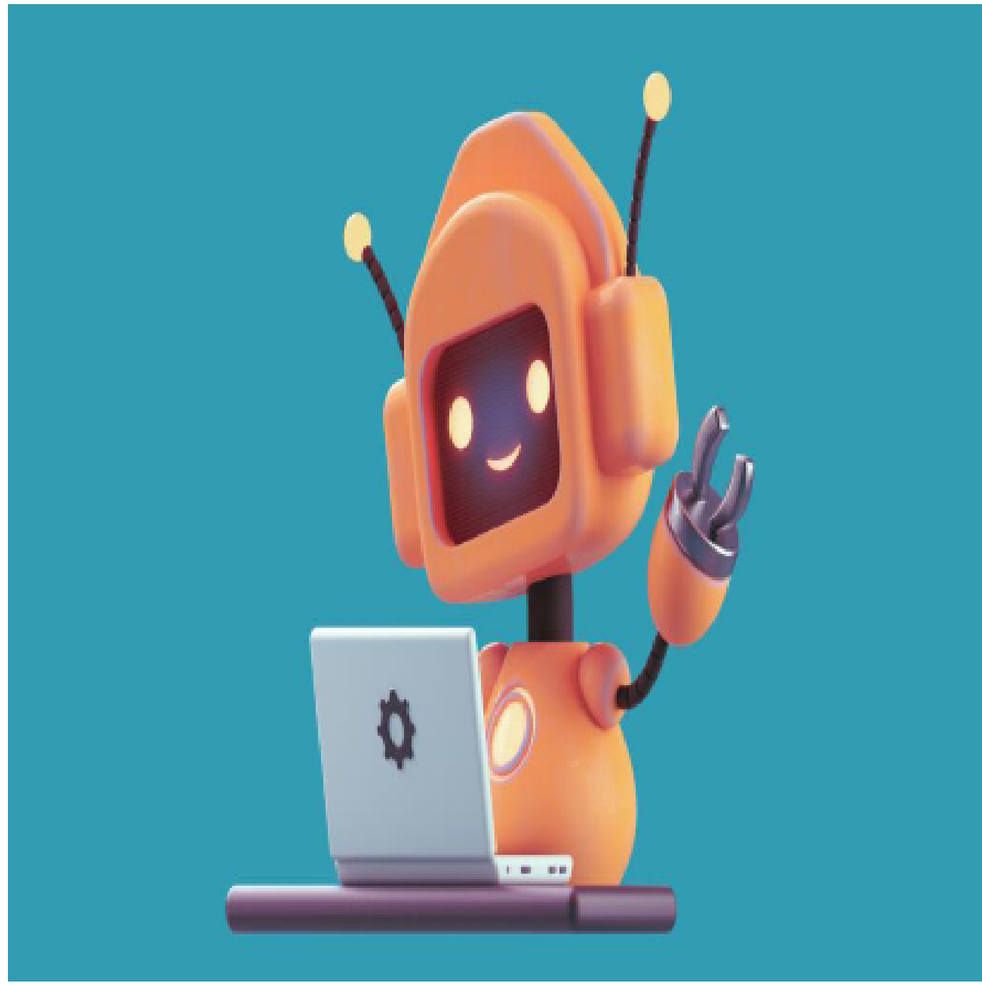
PROJECT TITLE : AI POWERED
TUTORING APPLICATION

TEAM NAME : SPARK

TEAM MEMBERS : SWETHA C
VIDHYASRI S



AI POWERED TUTORING APPLICATION

- a cutting-edge web application that leverages AI to provide personalized tutoring for mathematics.
- With an intuitive interface and engaging visualizations, students can track their progress and receive tailored recommendations from our integrated machine learning model.
- SmartLearn’ s robust backend stores user data, adapting to individual learning styles and pace. Experience adaptive learning at its finest with Smart Learn.

BUSINESS CASES

- **Supplemental Education**:

  Offer SmartLearn as an online supplement to traditional classroom learning, providing students with extra support and personalized guidance.

- **Test Prep:**

  Partner with testing organizations to provide AI-powered test preparation for standardized exams like the SAT, ACT, or GRE.

- **Corporate Training**:

  License SmartLearn to companies for employee upskilling and reskilling in areas like coding, data science, or cybersecurity.

- **Special Needs Education**:

  Develop customized AI-tutored programs for students with learning disabilities, such as dyslexia or autism.

THE PROBLEM AND NEED

Problem Background and Significance:

Traditional education often fails to cater to individual learning styles, leading to knowledge gaps and decreased student engagement. The COVID-19 pandemic has further exacerbated this issue, highlighting the need for effective online learning solutions.

Target Audience:

The primary target audience for this AI-tutored application includes:

1. **Students**: K-12 and higher education students seeking supplemental learning support.
2. **Teachers**: Educators looking to integrate AI-powered tools into their classrooms.
3. **Parents:** Guardians seeking personalized learning solutions for their children.
4. **Lifelong Learners:** Professionals and individuals pursuing continuous education and skill development.

FRONT END PROTOTYPE

1. **User Dashboard:**

   Interactive interface displaying learning progress, goals, and recommendations.
2. **Lesson Modules:**

   Engaging, bite-sized lessons with interactive quizzes, games, and exercises.
3. **Real-time Feedback:**

   Immediate feedback and assessment on student performance.

BACK END PROTOTYPE

1. Machine Learning Model:

Integrates AI-powered adaptive learning algorithms to provide personalized recommendations.

2. Data Storage:

Securely stores user progress, learning patterns, and performance metrics.

3. API Integrations:

Seamless integration with educational resources, libraries, and services.

TECHNICAL APPROACH

FRONT END :

1. React or Angular:

Utilize a JavaScript framework for building an interactive and responsive user interface.

2. D3.js or Chart.js:

Leverage data visualization libraries to create clear and engaging learning progress visualizations.

TECHNICAL APPROACH

Back-end:

1. Node.js or Django:

Employ a server-side framework for building a robust and scalable back-end architecture.

2. TensorFlow or PyTorch:

Integrate machine learning libraries to develop and train AI models for personalized recommendations.

3. MongoDB or PostgreSQL:

Utilize a database management system for secure and efficient data storage and retrieval.

SHORT TERM GOALS

1. Develop a functional prototype with a basic AI-powered tutoring system.
2. Integrate a user-friendly interface with interactive lessons and visualizations.
3. Conduct alpha and beta testing with a small group of users.
4. Refine the AI model and user interface based on feedback.
5. Launch a minimum viable product (MVP) with a limited feature set.

LONG TERMS GOALS

1. Expand the AI model to support multiple subjects and learning levels.
2. Develop a comprehensive analytics dashboard for educators and administrators.
3. Integrate with popular learning management systems (LMS) and educational platforms.
4. Establish partnerships with educational institutions and organizations.
5. Continuously improve the AI model and user interface based on user feedback and learning outcomes.

KEY FEATURES

1. Personalized Learning Plans:

AI-driven learning plans tailored to individual students' needs, pace, and learning style.

2. Interactive Lessons and Exercises:

Engaging, bite-sized lessons with interactive quizzes, games, and exercises for effective learning.

3. Real-time Feedback and Assessment:

Immediate feedback and assessment on student performance, identifying strengths and weaknesses.

4. Progress Tracking and Visualization:

Clear, visual representations of learning progress, helping students stay motivated and focused.

5. Adaptive Difficulty Adjustment:

AI-adjusted difficulty levels, ensuring students are challenged but not overwhelmed, promoting optimal learning.

USER FUNCTIONALITIES

1. **Registration and Login:**
   Secure user registration and login system.
2. **Course Selection:**
   Ability to select specific courses or subjects for tutoring.
3. **Interactive Lessons:**
   Engage with interactive lessons, quizzes, and exercises.
4. **Progress Tracking:**
   View learning progress, achievements, and recommendations.
5. **Support and Feedback:**
   Access to support resources, feedback mechanisms, and community forums.

ADMIN FUNCTIONALITIES

1. **User Management:**

   Manage user accounts, progress, and feedback.
2. **Content Management:**

   Create, update, and manage educational content.
3. **Analytics and Reporting:**

   Access to analytics, reports, and insights on user progress.
4. **AI Model Training:**

   Train and refine the AI model using user data and feedback.
5. **System Configuration:**

   Configure system settings, security, and integrations.