Edututor AI: personalized Learning with Generative AI

And LMS Integration

Project Documentation

1. Introduction

- Project title: Smart SDLC -AI-Enhanced software development life cycle

- Team member: Vaitheeshwaran L

- Team member: Akash R

- Team member: Dhivakar S

-Team members: Veeramani P

2. Project overview - Purpose:

The purpose of a Sustainable Smart City Assistant is to empower cities and their residents to thrive in a more eco-conscious and connected urban environment.

By leveraging AI and real-time data, the assistant helps optimize essential resources like energy, water, and waste,

while also guiding sustainable behaviors among citizens through personalized tips and services.

For city officials, it serves as a decision-making partner—offering clear insights, forecasting tools, and summarizations of complex policies to support strategic planning. Ultimately, this assistant bridges technology, governance, and community engagement to foster greener cities that are more efficient, inclusive, and resilient.

3.Features:

Conversational Interface

Key Point: Natural language interaction

Functionality: Allows citizens and officials to ask questions, get updates, and receive guidance in plain language

4.Policy summarization

Key Point: Simplified policy understanding

Functionality: Converts lengthy government documents into concise, actionable summarise

- AI Tutoring and Chat Support available 24/7 for student queries.

- Progress Tracking and Analytics to monitor learning outcomes.

- Natural Language Interface enabling easy interaction with the AI tutor.

5.System Architecture

Components:

Generative AI Module: Creates personalized learning content and responses.

LMS Backend: Manages courses, assignments, and assessments.

User Interface: Web or mobile app for student interaction.

6.Analytics Dashboard: Visualizes student progress and engagement metrics.

Include a block diagram showing interaction between components here.

7.Technologies Used

Frontend:HTML, CSS, ReactJS

Backend: Node.js or Django

AI Models: OpenAI GPT-4 or similar large language models

Database:MongoDB or MySQL

-LMS API: Integration with platforms like Moodle or Google Classroom

8.Benefits and Use Cases:

Benefits:

- Adaptive Learning Paths to suit different learning speeds and styles.

- Reduces Teacher Workload by automating routine queries.

- Provides 24/7 Doubt Solving assistance, increasing learning flexibility.

Use Cases:

- Enhances Rural Education accessibility.

- Supports Skill-Based Learning programs.

- Assists Special Needs Education with customized support.

 9.Conclusion:

- AI enhances educational outcomes by offering personalized, intelligent, and interactive learning experiences, meeting the needs of diverse learners.

-EduTutor demonstrates the powerful potential of integrating *Generative AI* with *Learning Management Systems (LMS)* to revolutionize personalized education.

By tailoring learning paths, generating dynamic content, and providing instant feedback, the platform enhances both the teaching and learning experience.

The system adapts to individual student needs, identifies learning gaps, and fosters continuous engagement through conversational AI.

This model supports educators with automated tools while empowering students to take control of their own learning journey. EduTutor bridges the gap between technology and education, making intelligent, personalized learning more accessible and efficient.

10.Future Scope

- Content Generation

Expand EduTutor’s reach by supporting content creation and tutoring in multiple regional and global languages.

- Analytics and Insights*

Integrate data-driven dashboards for teachers, showing student progress, topic mastery, and predictive learning outcomes.

- Support for multiple regional languages to broaden accessibility.

- Integration with Virtual Reality (VR) classrooms for immersive learning.

- AI-driven feedback tools to assist teachers in improving instruction quality.

Add reward systems, quizzes, and interactive storytelling to enhance student engagement and motivation.

-Integration with AR/VR for Immersive Learning*

Combine with augmented or virtual reality environments for hands-on learning experiences in subjects like science, engineering, or medicine.

-Voice-Based Tutoring Assistant

Develop a voice-activated version for accessibility, enabling visually impaired learners or early learners to interact easily.

-Adaptive Learning Paths with Real-Time Feedback

Implement dynamic path correction where the AI modifies the learner's curriculum based on performance in real time.

-Teacher-AI Collaboration Tools

Enable educators to co-create AI-generated lesson plans, assignments, and grading systems to reduce manual workload.

11.screenshots

12.known issues

13.Future enhancement