**Project Synopsis**

**AI-Chatbot for Student Queries**

# Problem Statement:

Students often face difficulties in obtaining quick and accurate answers to academic and administrative queries. Traditional methods like approaching faculty, browsing websites, or contacting help desks are time-consuming and sometimes unresponsive. This lack of immediate assistance can hinder student productivity, delay important decisions, and overwhelm administrative staff with repetitive queries.

# Proposed Solution:

The AI Chatbot for Student Queries is an intelligent, web-based assistant designed to provide instant, accurate, and context-aware responses to student questions. The chatbot is powered by advanced NLP models, capable of understanding natural language queries and providing meaningful answers. The system will include a frontend chat interface (React), a backend (Node.js) to handle API calls and authentication, and an FAQ storage system for quick access to common queries.

# Objectives:

* To offer students a **24/7 self-service query resolution platform**.
* To reduce the **repetitive workload of faculty and administrative staff**.
* To provide a **personalized, scalable, and user-friendly** system for academic institutions.
* To integrate **AI-driven natural language understanding** in higher education support systems.

# Methodology:

* **Backend (Node.js):**
  + REST APIs for authentication, chatbot query handling, and FAQ management.
  + Role based login system for students and admin.
* **Frontend (React):**
  + Develop an interactive chat UI for students.
  + Support features like real-time chat, login, and query history.
* **AI-chatbot integration:**
  + Use **OpenAI API** (GPT models) for NLP-driven query resolution.
* **Database (MySQL)**:
  + Store FAQs, chat logs, student login details, and fallback tickets.

# Expected Outcome:

* A **scalable, AI-driven chatbot** capable of answering student queries with high accuracy.
* **Reduced dependency on administrative staff**, freeing them for critical tasks.
* Improved **student experience** through instant, round-the-clock query resolution.
* A flexible system that can be extended to include **voice-based chatbots, integration with LMS portals, or multilingual support**.