Team - 13

Bright Beats (Project Report) |

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Team members:-

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Project Overview:

BrightBeats is a cutting-edge platform designed to connect students seeking mentorship with a pool of qualified student mentors. These mentors are carefully vetted through interviews conducted by faculty administrators, ensuring a high standard of expertise. Faculty members play a key role in maintaining the platform by adding and updating mentor profiles within their departments.

The platform's standout feature is its AI-powered search functionality. Users can interact with the system using natural language queries, which are seamlessly translated into SQL queries to efficiently retrieve relevant mentor information from the database. This intuitive approach simplifies the search process and enhances the overall user experience.

Key Objectives:

- **Robust Data Management:** Create a well-structured database to store comprehensive information about student mentors, including their skills, experience, and availability.
- **Intelligent AI Integration:** Develop an AI-driven interface that empowers users to interact with the database using natural language, eliminating the need for complex search parameters.
- **Advanced Search Capabilities:** Implement a powerful search engine that allows users to quickly find mentors based on specific skills, interests, or other criteria.
- **User-Centric Design:** Build a user-friendly web interface that prioritizes ease of navigation and presents mentor profiles in a clear and organized manner.
- **Scalable Architecture:** Ensure the platform can seamlessly accommodate a growing number of users and data without compromising performance.
- **Stringent Security Measures:** Implement robust security protocols to safeguard user data and prevent unauthorized access.

Scope and Features:

- **Target Audience:** Primarily faculty members responsible for managing student mentors and students seeking mentorship opportunities.
- **Core Features:**
    - Faculty registration and profile management
    - Mentor profile creation and management
    - AI-powered natural language search interface
    - SQL-based database for efficient data storage and retrieval
    - Intuitive and user-friendly web interface

- **Technology Stack:**
    - Frontend: Next Js, React Js, Streamlit, TKinter
    - Backend: PyMysql for MySql Workbench interaction
    - Database: MySQL Workbench by Oracle
    - AI Integration: GROQ API (groqcloud) + finetuning

- **Initial Focus:** The first version of the platform will prioritize essential features like mentor profiles and skill-based searches. Future enhancements will be based on user feedback and evolving needs.

Requirements Analysis:

- **Functional Requirements:**
    - User management (faculty and student registration, profile creation)
    - Mentor profile management (adding, updating, deleting mentor details)
    - AI-powered search with natural language processing
    - Data visualization (organized display of mentor profiles)
    - Administrative features (user account management, content moderation)
- **Non-Functional Requirements:**
    - Performance (handling concurrent users, fast query response times)
    - Security (encryption, role-based access control, protection against threats)
    - Scalability (accommodating growth)
    - Usability (intuitive interface)
    - Reliability (high uptime, backup and recovery)

By combining a comprehensive mentor database with AI-driven search capabilities, BrightBeats aims to revolutionize the way students connect with mentors, fostering a more accessible and efficient mentorship experience.