TITLE:

COURSE COMPASS: NAVIGATING THE FUTURE OF EDUCATION AND CAREER

DOMAIN:

Web Development and Data Analysis

TEAM MEMBERS:

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OBJECTIVE:

To develop a system that analyzes current educational and industry trends to predict **high-scope courses for the future** and suggest the best colleges for each, enabling students to make informed career and education choices aligned with future demands.

ABSTRACT:

This project proposes the development of **Course Compass**, a predictive guidance system that helps students identify **future-ready courses and the best colleges offering them**, using trend analysis and data scraping. In the current fast-changing education and industry landscape, students often struggle to select the right courses aligned with emerging technologies and market needs.

The proposed system fetches and analyzes data from **Google Trends, job market platforms, and college websites** to predict which courses will have high demand and scope in the coming years. By utilizing **trend analysis, basic machine learning (linear regression), and matching algorithms**, the system suggests top colleges for these courses based on rankings and course offerings.

The system uses a clean web interface for students to view:

- The top trending courses for the future.

- Graphs comparing the growth of different courses (e.g., AI, Cybersecurity, Data Science).
- College recommendations aligned with high-scope courses.

Data visualizations are generated using **Chart.js or Plotly** for clear and actionable insights. This project helps students and educational planners align decisions with evolving market and technology trends to enhance career readiness.

EXISTING SYSTEM:

Currently, students rely on manual research, outdated guidance, and scattered information to choose courses and colleges, often missing insights into emerging trends and future scope. There is **no integrated system providing data-driven course and college recommendations** based on live trends and market demands.

PROPOSED SYSTEM:

The proposed **Course Compass** system overcomes these limitations by:

- Fetching live data from Google Trends for course demand analysis.
- Scraping college websites to gather course offerings and ranking data.
- Predicting future popularity of courses using basic ML algorithms.
- Matching top colleges to each trending course.
- Displaying visually intuitive graphs to guide students effectively.

Benefits:

- Students can confidently choose courses aligned with future job trends.
- Reduces manual research time for students and counselors.
- Easy access to college suggestions for specific courses.
- Promotes future-ready education planning.

SYSTEM REQUIREMENTS

Software Requirements:

- Operating System: Windows 7 & above
- Backend: Python (Flask/Django)
- Frontend: HTML, CSS, JavaScript (React optional)
- Database: SQLite / MongoDB
- APIs: Google Trends API (pytrends), BeautifulSoup/Selenium for web scraping
- Data Visualization: Chart.js / Plotly

Hardware Requirements:

- Processor: Intel Pentium III or above
- RAM: 256 MB & above
- Hard Disk: 20 GB & above
- Monitor: SVGA Colour Monitor
- Keyboard: Multimedia Keyboard

PROBLEM STATEMENTS

1) Problem: Students struggle to identify which courses will have future demand.
Solution: Use **Google Trends data** and trend analysis algorithms to predict course demand for upcoming years.

2) Problem: Students face difficulties in matching courses with the best colleges.
Solution: Use **web scraping** to collect college course and ranking data and implement a **matching algorithm** for recommendation.

3) Problem: Lack of visual insights makes decision-making difficult.
Solution: Use **Chart.js/Plotly to display comparative graphs** showing course popularity and trends over time.

4) Problem: Manual research for course and college selection is time-consuming.
Solution: Automate data collection and analysis using **pytrends and scraping scripts** to provide ready insights.

5) Problem: Static guidance does not consider market dynamics and technological evolution.
Solution: Use **live data and periodic updates** to keep course recommendations aligned with emerging trends.