Project Proposal

Team Members

Name	Role
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1. Project Title

The Hidden Gaps Between Students' Effort and Real Opportunities:
(A Data Driven Analysis of Skill Mismatch and Opportunity Accessibility)

2. Objective

This project aims to analyze the hidden gap between the effort students invest in learning, self-development, and skill acquisition, and the real opportunities they manage to access, such as internships, jobs, scholarships, and exchange programs.
The objective is to uncover mismatches between students' perceived readiness and actual market requirements, identify structural and informational barriers, and provide data driven insights that can support educational institutions and policymakers in improving opportunity accessibility and alignment with student effort.

3. Dataset Description

The project relies on survey-based and secondary datasets including:

- Student Effort Indicators:
  Study hours, online courses, certifications, projects, and extracurricular activities.
- Opportunity Outcomes:
  Internship applications, job offers, interview callbacks, exchange program acceptance.
- Skill Indicators:
  Technical skills, soft skills, language proficiency, self-assessed readiness.
- Awareness & Accessibility Factors:
  Awareness of opportunities, access to mentorship, networking channels, and guidance.
- Demographics:
  University, academic year, field of study, and location.

4. Methodology

Week 1: Data Modeling, Cleaning, and Preprocessing

- Design a structured data model representing effort, skills, and opportunity outcomes.
- Clean survey data, handle missing values, normalize effort metrics, and encode categorical variables.
- Tools: SQL, Python (Pandas).
- Deliverables: Cleaned dataset and preprocessing notebook.

Week 2: Analysis Questions Phase

Key analysis questions include:

- Does higher effort always lead to better opportunity outcomes?
- Which skills show the largest mismatch between effort and market demand?
- How does opportunity awareness affect success rates?
- Are some student groups systematically disadvantaged despite similar effort levels?

Deliverables: Documented analysis questions with exploratory visualizations.

Week 3: Insight Modeling & Trend Analysis

- Segment students based on effort outcome patterns.
- Identify clusters such as high effort/low opportunity students.
- Analyze trends and correlations between effort, skills, and outcomes.
- Tools: Python (Pandas, Scikit-learn), statistical analysis.

Deliverables: Insight reports and analytical plots.

Week 4: Visualization Dashboard and Final Presentation

- Build an interactive dashboard illustrating effort vs opportunity gaps.
- Enable filtering by skills, universities, and opportunity types.
- Present actionable insights and recommendations.
- Tools: Power BI or Tableau.

Deliverables: Interactive dashboard and final presentation.

5. Expected Outcomes

- Clear identification of gaps between student effort and real world opportunities.
- Data-backed recommendations for improving opportunity awareness and skill alignment.
- A strong end to end data analysis project demonstrating data modeling, analytics, and visualization skills.