SMART INDIA HACKATHON 2025

TITLE PAGE

- **Problem Statement ID -** 25094

- **Problem Statement Title -** One-Stop Personalized Career & Education Advisor

- **Theme -** Smart Education

- **PS Category -** Software

- **Team ID -**

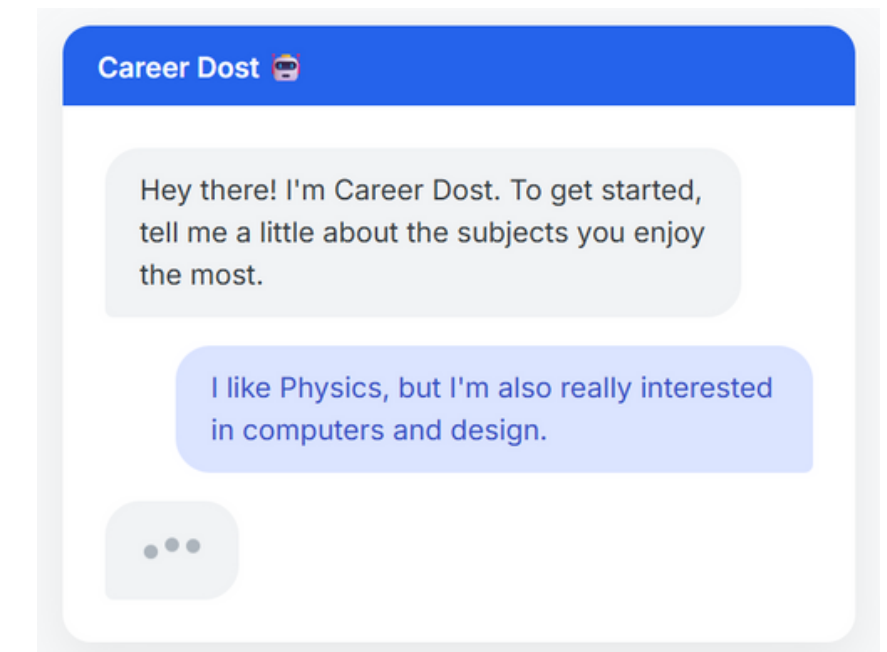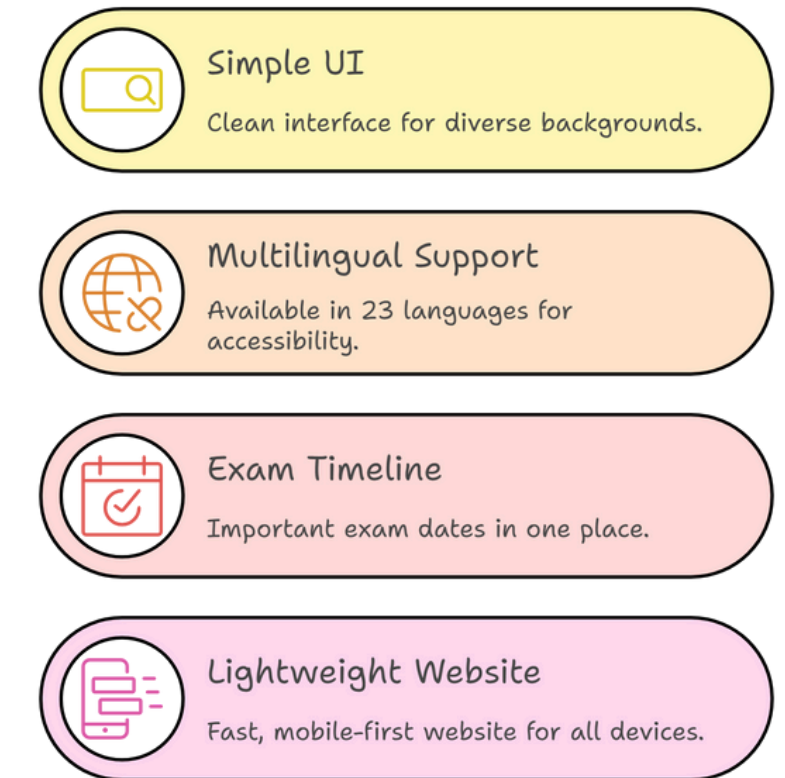- **Team Name (Registered on portal) -** Epsilon

IDEA TITLE

Introducing **Career Disha**, Your ultimate career launchpad. A Web Platform with AI mentor **Career Dost**, a massive College Directory, direct guidance from industry leaders and much more, all at one place.

Problems

- **Career Confusion:** Many students are unaware about latest careers choices and even their own interests.

- **Parental & Peer Pressure:** Career decisions are often based on what family and relatives suggests or what friends are doing, not on the student's actual capabilities.

- **Real College Information:** Hours are wasted searching actual and honest information about placements, faculty, and campus life about colleges.

- **No Link to the Real World:** Students life revolves around coaching and school. They have no easy way to connect with professionals already working in different fields to get practical advice.

Simple UI
Clean interface for diverse backgrounds.

Multilingual Support
Available in 23 languages for accessibility.

Exam Timeline
Important exam dates in one place.

Lightweight Website
Fast, mobile-first website for all devices.

Solution

- **AI Mentor (Career Dost):** Meet **Career Dost**, the AI mentor listens to user's interests, **analyzes future market needs**, and provides personalized roadmap towards user's dream career.

- **A living College Database:** Career Dost also **smartly takes real-time data** via conversation about **user's college**(If already in college) to keep the database up-to-date.

- **Bridge to Real World:** The platform will provide **live** & **interactive sessions** where students connect directly with **Industry Leaders.**

- **Course Suggestions:** By leveraging user interests data gathered by Career Dost, Courses are suggested both free and also **paid courses** of our **Premium Future Partners**.

Career Dost 🤖

Hey there! I'm Career Dost. To get started, tell me a little about the subjects you enjoy the most.

I like Physics, but I'm also really interested in computers and design.

TECHNICAL APPROACH

Onboarding & Auth:
- *Google Firebase Authentication* for secure and scalable user management.

Conversational Data Collection
- CareerDost uses **Gemini API**, a **Retrieval-Augmented Generation (RAG)** strategy and **Multi-Layer Prompting** for doing users interest centric conversations.
- User's data like interests, educational status, name, and more is retrieved and stored in **Firestore** and raw chats in **Amazon S3.**

Self-Updating College Directory:
- We verify official stats (placements, fees) via **Web Scraping,** while our chatbot captures authentic student experiences (campus life, real culture) through conversation.
- A dedicated **ETL Pipeline** processes this data, then loads into **MongoDB** for high-performance querying.
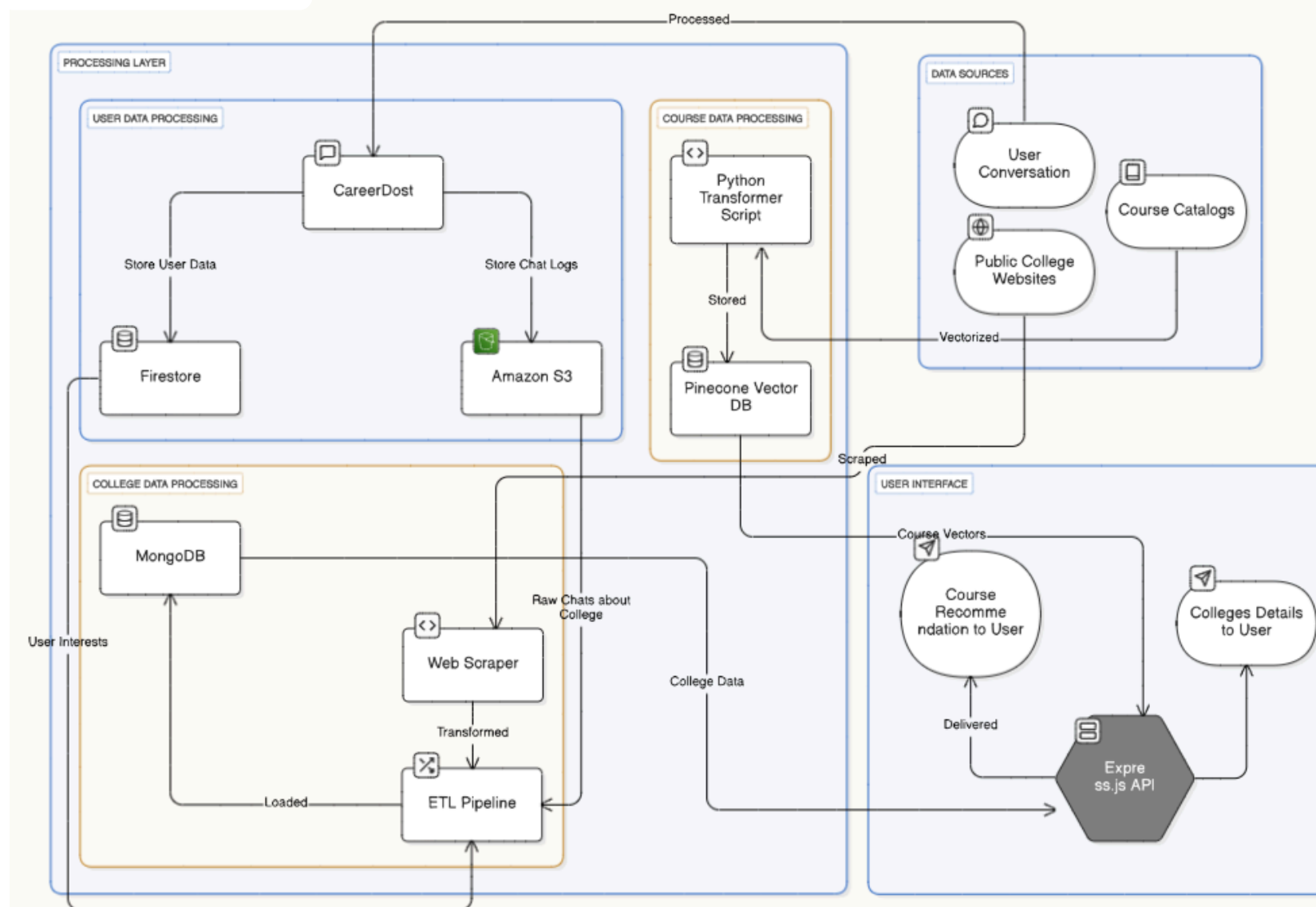
Courses Recommendation Algorithm:
- A **Python** Script constantly aggregates course catalogs from sources.**Sentence-Transformers** are used to convert both the course content and the user's interests *(retrieved from Firestore)* into **Vector Embeddings**, which are indexed in our **Pinecone Vector Database**.
- When a user visits the Courses tab, **Express APIs** in backend performs **Semantic Search Query** on **Pinecone** to show courses that are most relevant to the user's interests.

Hosting, DevOps & Version Control:
- *Career Disha* is currently hosted on **Render** as two distinct services—one for the main application and another for the Career Dost, which are then integrated in backend via APIs.
- **Github** & **Git** for version control, **Docker** for containerization and **Redis** for Caching.

Technical Workflow

Tech Stacks Used:

FEASIBILITY AND VIABILITY
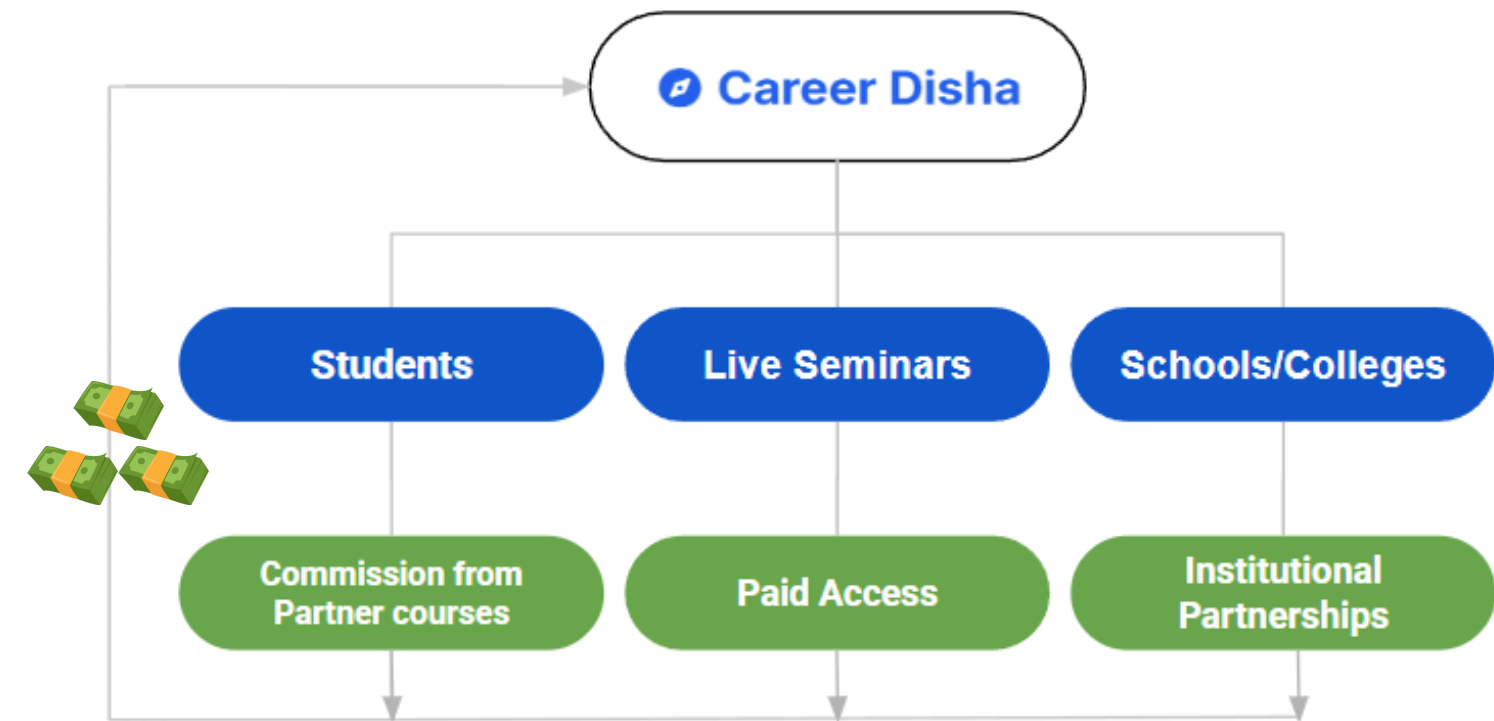
Feasibility Analysis
- **Proven Tech:** The proposed technology stack is **Clearly Defined**, utilizing **Scalable** *services* like Google Firebase, Amazon S3 and more.

- **Low Operational Cost:** Career Disha leverages **Cost-Effective** cloud services and aggregates **Free**, **High-Quality** content from sources like NPTEL and YouTube.
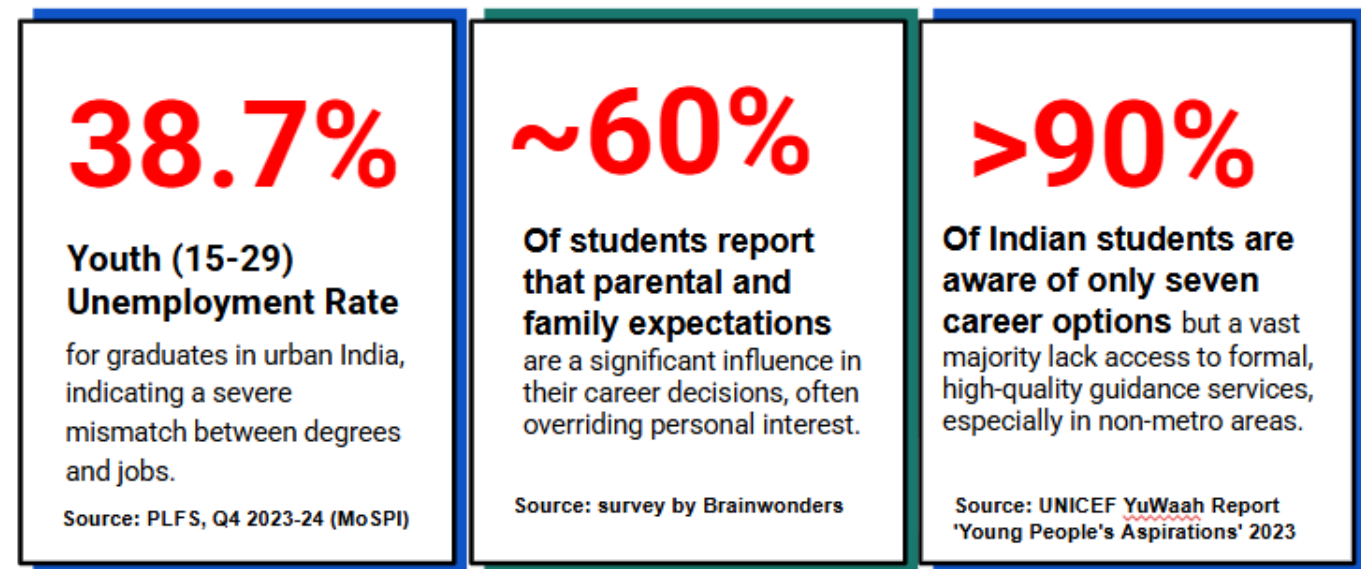
Potential Challenges & Risks
- **User Adoption:** *Reaching* students in **Rural Areas** and ensuring they adopt the platform.

- **Scalability of Storage and API Costs:** Growing user base **increases API calls** and **cloud storage costs**, requiring efficient management and fund availability to stay functional.

- **The Gatekeeper Problem:** Gaining **trust of parents** & **schools** for letting students engage with Artificially Intelligent Platform on Internet.

Strategies to Overcome Challenges
- **Accelerating Adoption:** Begin with a **Pilot Launch** in small cities and rural areas to gather feedback, then scale nationwide.

- **Rate Limiting & Caching:** Control query frequency per user and **Cache Common AI Responses** to prevent abuse, cut costs, and Improve speed.

- **Revenue Generation:** Revenue will be generated through a balanced model of **Commissions** on premium partner courses, **Paid Live Seminars**, and **Institutional Partnerships**.

- **Building Trust:** Ensuring strict compliance with data privacy laws like **India's DPDP Act**, especially when **handling data from minors**, and aligning our platform with the goals of the **National Education Policy (NEP)**.

Revenue Model Flowchart

38.7% Youth (15-29) Unemployment Rate for graduates in urban India, indicating a severe mismatch between degrees and jobs.
Source: PLFS, Q4 2023-24 (MoSPI)

~60% Of students report that parental and family expectations are a significant influence in their career decisions, often overriding personal interest.
Source: survey by Brainwonders

>90% Of Indian students are aware of only seven career options but a vast majority lack access to formal, high-quality guidance services, especially in non-metro areas.
Source: UNICEF YuWaah Report 'Young People's Aspirations' 2023

Urgent Need for Career Guidance

IMPACT AND BENEFITS

Potential Impact on the Target Audience:

- **Informed Academic Choices:** We project a significant reduction in student confusion, leading to better subject stream selection after Class 10 & 12.
- **Increased College Enrollment:** The platform can directly boost enrollment rates in local government colleges by 15-20% by clearly mapping courses to viable careers.
- **Reduced Dropout Rates:** By providing clear roadmaps and reducing anxiety, we aim to decrease student dropout rates between high school and college.
- **Empowered Students:** Students will gain the confidence and data needed to pursue careers based on genuine interest, not just parental or peer pressure.

Benefits of the Solution:

Social:
- Makes top quality career guidance available to all, providing equal opportunities to students in remote and rural areas.
- Reduces the societal pressure of old and traditional career paths by presenting a wider range of professions.
- Empowers students to make choices that lead to greater long-term career satisfaction and well-being.

Economic:
- Directly boosts graduate employability by aligning students' skills with industry demands.
- Reduces finance wastage of families by preventing investment in unsuitable courses or institutions.

Educational:
- Real world industrial guidances would be made available to students by inviting industrial leaders to give seminars and all the stuff.
- Promotes continuous learning by recommending relevant and personalized online courses and skill development opportunities.

Understanding Core Problem To Solve

- ▶ **93% Indian students aware of just seven career options**
- ▶ **Analyzing Education Challenges in Rural Areas**
- ▶ **Dropout rates in India**
- ▶ **Indian EdTech market**
- ▶ **Building Trust in AI for education**
- ▶ **Digital education divide in India (rural students)**
- ▶ **Understanding cloud scalablity and API costs**
- ▶ **Pilot launch for Edtech platform**
- ▶ **Benefits of digital career guidance and education**

AI Tools
- https://gemini.google.com
- https://chat.openai.com
- https://ai.google.dev/

Documentation
- https://www.geeksforgeeks.org
- https://www.w3schools.com
- https://developer.mozilla.org
- https://medium.com

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