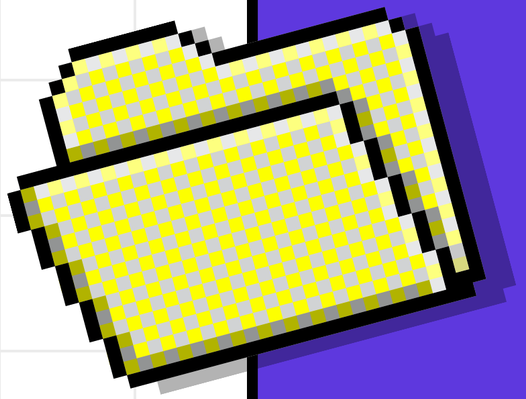
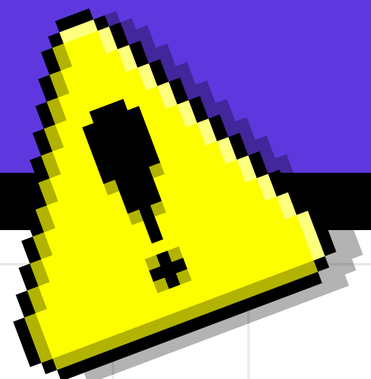
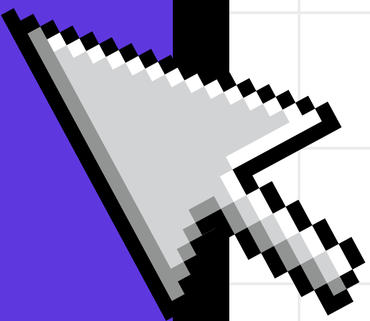
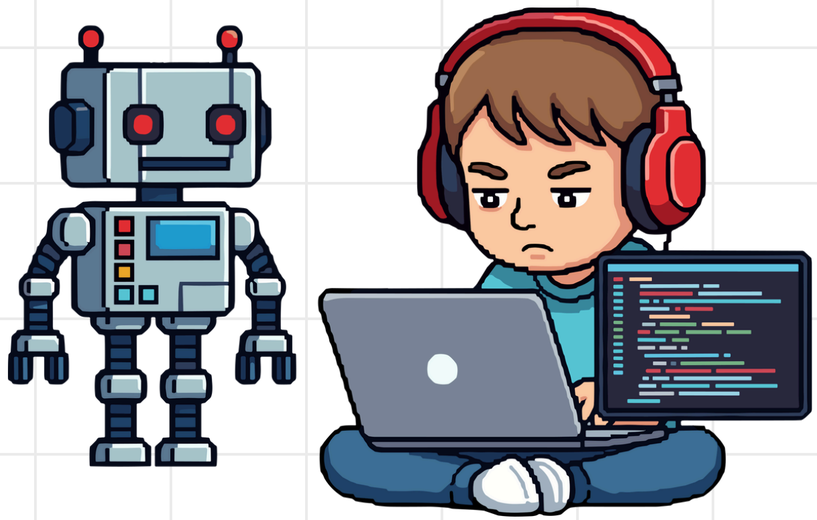
DEVCRAFT 2026: PROBLEM STATEMENTS







01. AGENTIC AI & EDTECH



Problem Statement:

Docu-Agent: The Intelligent Eligibility Parser

The Context :

Government schemes, scholarship rulebooks, and guidelines are often dense, bureaucratic, and difficult to decipher. Students frequently miss life-changing opportunities simply because they cannot navigate complex eligibility criteria hidden within 50-page legal PDFs.

The Challenge:

Develop an Agentic AI system that acts as a smart personal assistant. The system must move beyond simple text summarization to perform "Actionable Intelligence." It should ingest complex PDF documents, cross-reference them with a user's specific profile (Income, Caste, Education), and generate a determinist "Eligible/Not Eligible" result with a step-by-step execution plan.

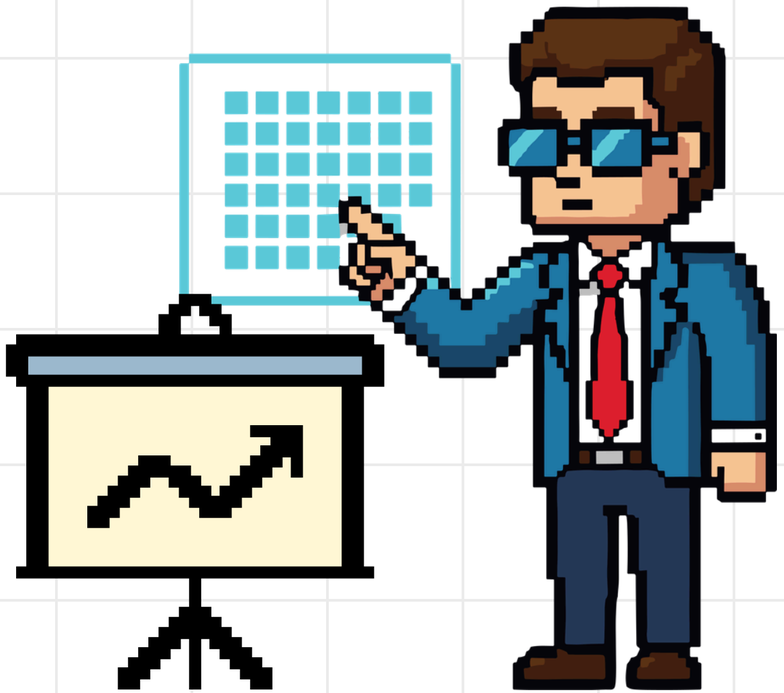
Key Deliverables (MVP):

- Smart Profile Creation: A dynamic form to capture user attributes (e.g., Annual Income, Category, Academic Year).
- Logic Extraction Engine: An AI pipeline that reads "Rulebooks" (PDFs) and extracts logic (e.g., If Income < 8L AND Category = OBC -> Eligible).
- Eligibility Engine: A comparator that runs the User Profile against the Extracted Logic.
- Action Roadmap: If eligible, generate a dynamic checklist (e.g., "Step 1: Obtain Income Certificate from Tehsildar").

Bonus Features:

- Auto-Fill Agent: Browser extension that maps extracted data to filling live application portals.
- Missing Document Guard: Analyze a user's uploaded document folder and flag missing required files.
- Multilingual Output: Process English PDFs but generate the "To-Do List" in vernacular languages (Hindi/Marathi).

02.EVENT TECH & ANALYTICS



Problem Statement:

EventPulse: Sponsor ROI & Crowd Analytics Ecosystem

The Context :

Sponsorship is the lifeblood of college festivals, yet it remains a "Black Box" investment. Sponsors pour money into events but rarely receive concrete data on student engagement, footfall, or brand visibility. Organizers struggle to prove ROI, making future fundraising difficult.

The Challenge :

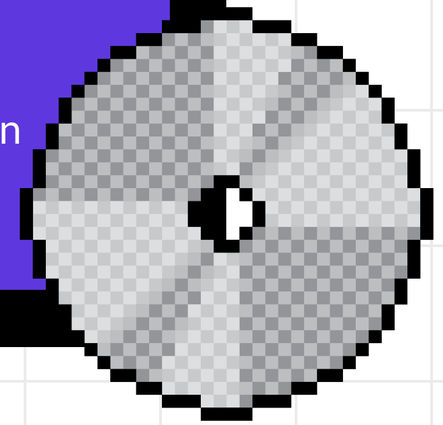
Build a Phygital (Physical + Digital) Engagement System that gamifies student interaction to generate verifiable data for sponsors. The solution must bridge the gap between physical stall visits and digital analytics without disrupting the flow of the event.

🛠️Key Deliverables (MVP):

- The "Fest Passport": A mobile web app where students scan QR codes at sponsor stalls to "Check-In."
- Gamified Incentives: Logic that unlocks rewards (e.g. Food Coupons, Concert Fast-Track) only after N number of scans.
- Sponsor Dashboard: A real-time analytics panel displaying unique footfall, peak visiting hours, and user demographics (anonymized).
- Offline-First Architecture: Ensure QR scanning works even with spotty network connectivity, syncing data when online.

⭐Bonus Features:

- Crowd Heatmaps: Visual representation of high-traffic zones within the event ground.
- One-Tap Resume Drop: Allow students to share their professional profile with hiring sponsors instantly via QR scan.
- Fraud Detection: Algorithms to prevent "buddy scanning" (one person scanning for friends) or duplicate scans.



03.DISTRIBUTED SYSTEMS & FINTECH

Problem Statement:

FlashScale: High-Concurrency Real-Time Auction Engine

The Context :

In the economy of "Hype Drops" (Sneakers, NFTs, Concert Tickets), thousands of users bid simultaneously in windows lasting only seconds. Traditional e-commerce architectures often fail under this "Thundering Herd," leading to race conditions, double-spending, or crashed servers.

The Challenge:

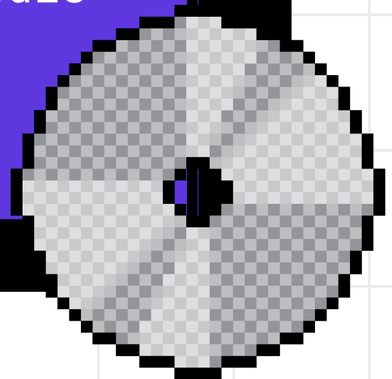
Architect a **Real-Time Micro-Auction Platform** capable of handling intense concurrent write operations. The system must maintain strict data consistency—the highest valid bid must always win, and all users must see state changes instantly.

🛠️ Key Deliverables (MVP):

- The "Hot Potato" Backend: A bidding engine that handles race conditions where two users bid the same amount at the same millisecond.
- Live Auction Interface: A countdown-timer-based UI where bid updates are pushed via WebSockets (no page refreshes).
- Latency Visualization: Display the "Current Highest Bid" with sub-second latency to all connected clients.

⭐ Bonus Features:

- System Stress Test: Demonstrate the system handling 100+ concurrent requests using a load testing tool.
- Rate Limiting: Intelligent blocking of bot-spam bids.
- Architecture Diagram: A clear explanation of the stack (e.g. Redis for caching/locking, Java/Go for concurrency)



04. SOCIAL CONNECTIVITY & OPEN INNOVATION

Problem Statement:

CollabSphere: Context-Aware Skill Matching Protocol

The Context :

Building a team for a hackathon or a startup is currently inefficient. Platforms like LinkedIn are too broad, and manual networking is limited by who you know physically. High-potential projects fail because technical founders can't find marketing co-founders, or backend developers can't find frontend designers.

The Challenge:

Design an **Intelligent Collaboration Platform** that moves beyond simple profile listings. The system should use algorithmic matching to connect users based on complementary skills, project requirements, and availability.

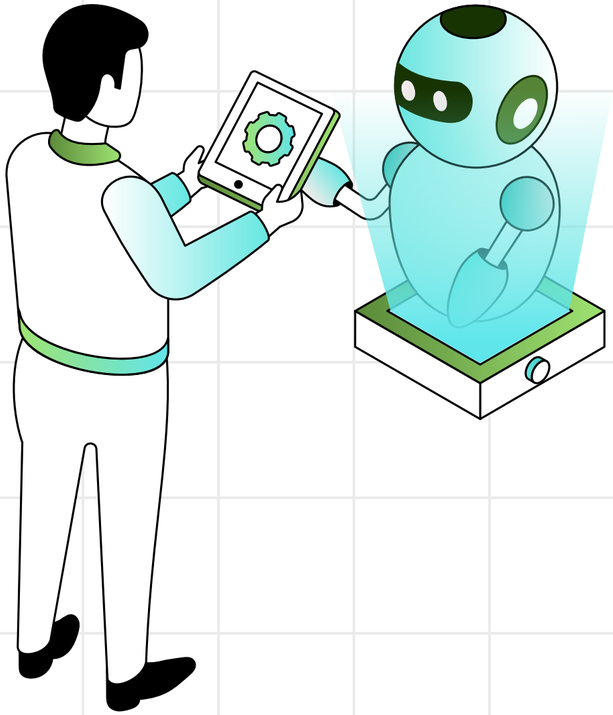
🛠️ Key Deliverables (MVP):

- Comprehensive Tech Profiles: Users define "Verified Skills" (e.g. GitHub integration) rather than just self-claimed titles.
- The Matchmaking Algorithm: A logic engine that suggests teams based on "Skill Gaps" (e.g. Pairing a frontend-heavy project with a developer who specializes in animations and interactive UI.).
- Project Bazaar: A structured feed where projects can post "Open Roles" (e.g., "Looking for UI/UX Designer for 48 hours").
- Real-Time Negotiation: Integrated chat or request system to finalize team formation.

⭐ Bonus Features:

- Compatibility Score: An AI score predicting how well two users might work together based on past project history.
- Smart Scheduling: Auto-detect common free time slots for the newly formed team to meet

05. GOVTECH & CIVIC INTELLIGENCE



Problem Statement:

CivicSense: AI-Driven Issue Redressal & Prioritization

The Context :

Public governance bodies are overwhelmed by thousands of unstructured citizen issue daily (tweets, emails, handwritten letters). Currently, complaints are manually sorted, leading to delays in critical issues (e.g. open manholes) while administrative staff focuses on minor issues.

The Challenge:

Develop an AI-Powered Triage System using Natural Language Processing (NLP) to automate the ingestion, classification, and routing of citizen complaints. The goal is to move from "First Come, First Served" to "Severity-Based Resolution."

🛠️ Key Deliverables (MVP):

- Multi-Channel Ingestion: A portal that accepts complaints via Text, Voice Note, or Image.
- NLP Classifier: Automatically tag complaints into categories (Sanitation, Infrastructure, Safety).
- Sentiment & Urgency Analyzer: AI logic to detect "Urgency" words (e.g., "Accident," "Fire," "Blocked") and assign a Priority Score (High/Medium/Low).
- Automated Routing: Dispatch the complaint to the correct department dashboard based on the tag.

⭐ Bonus Features:

- Voice-to-Text for Accessibility: Allow rural citizens to record grievances in local dialects, transcribing them to English for officials.
- Duplicate Detection: Identify if 50 people are reporting the same pothole and group them into a single ticket.
- Predictive Analytics: Highlight areas that are becoming "Hotspots" for specific types of grievances.
- Multi-lingual support(Hindi/Marathi).

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