

HackLondon Idea

AI as a study partner

INITIAL

Project: Aura — The Adaptive Student OS (UK Edition)

Tagline: The AI Chief-of-Staff for the UK Student. From Moodle to Graduate Schemes.

The Problem: The "UK Degree" Pressure Cooker

- **The Moodle Maze:** UK universities (UCL, KCL, Manchester, etc.) use Moodle as a dumping ground for "Essential Reading" and modular assessments that are hard to track.
- **The Graduate Scheme Sprint:** UK internship and "Grad Scheme" windows (HSBC, BBC, Civil Service) are notoriously early and rigid. Students miss out simply because they are buried in coursework.
- **Mental Health Crisis:** 1 in 3 UK students disclose mental health conditions. Rigid "to-do lists" contribute to burnout rather than solving it.
- **The "Human-in-the-Loop" Policy:** UK universities now have strict "AI Guidance" (Russell Group principles). Students need tools that help them *think*, not just tools that *write* for them.

The Solution

Aura is a **biometric-aware OS** that synchronizes your UK academic life with the national career calendar. It uses the **Socratic Mirror** to act as a "tutor" that complies with UK academic integrity standards by fostering genuine understanding.

The UK-Specific Pillars

1. The "Grad Scheme" CRM (Career & Career)

- **Bright Network & TargetJobs Integration:** Aura auto-syncs with major UK internship deadlines. If an **HSBC Summer Internship** closes on Feb 22nd, Aura moves your LeetCode prep for that role to the top of your feed.
- **UCAS to CV Bridge:** For first-years, Aura helps translate A-Level achievements into a first-year "Spring Week" ready CV.

2. The Socratic Mirror (Russell Group Compliant Learning)

- **Feynman-Based Active Recall:** Instead of summarizing a lecture, Aura asks you to explain the **"Three-Lens Framework"** or specific UK case laws.
- **Viva Voce Prep:** In the UK, high-level understanding is tested via discussion. Aura's **ElevenLabs** voice acts as a mock "Viva" examiner, prepping you for the British style of academic defense.

3. Biometric Well-Tech (The "Student Minds" Layer)

- **Presage SDK for Duty of Care:** Aura aligns with the **University Mental Health Charter**.
 - **Focus High:** It suggests a 2-hour "Deep Work" block on your dissertation.
 - **Stress High (Detected via Webcam):** Aura suggests a walk to the nearest park or a "Low-Stakes" task, like updating your LinkedIn.



Sponsor Prize Strategy (UK Focus)

- **Gemini:** For UK-specific curriculum alignment (e.g., matching tasks to the **QAA Higher Education Framework**).
- **ElevenLabs:** Using a "British Professional" voice (e.g., 'Brian' or 'Alice') to make the personal assistant feel localized.
- **MongoDB Atlas:** Managing the "UK Knowledge Graph"—linking UK university modules to London/Manchester-based job opportunities.
- **Vultr:** Localized hosting in London/Manchester data centers for ultra-low latency during live demos.



The "Wow" Demo Moment

1. **The London Briefing:** Aura (in a calm British accent): *"Good morning. You have a coursework deadline for 'Macroeconomics' at 4 PM. I noticed you've been scrolling LinkedIn—I've blocked it until you finish your Socratic check on the Bank of England's latest report."*
 2. **The Career Hook:** Drag a **BBC Graduate Scheme** posting into Aura. It instantly analyzes your Moodle module list and says: *"You're a 85% match based on your 'Digital Media' module, but you need to practice 2 more Python patterns for the technical test."*
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Tech Stack (The UK Stack)

- **Frontend:** React + Tailwind (Clean, minimalist "British" design).
 - **Backend:** FastAPI hosted on **Vultr (London Region)**.
 - **Scraping:** **Playwright** specifically tuned for UK University SSO (Single Sign-On).
 - **Intelligence:** **Gemini 1.5 Pro + ElevenLabs** (British English voices).
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UK-Specific MVP Checklist

- ☐ **SSO Handshake:** Ensure your Playwright script can handle a standard UK University "Microsoft/Okta" login.
 - ☐ **Bright Network Scraper:** A simple script to pull "Top 5 Deadlines" from UK career sites.
 - ☐ **Socratic "Viva" Mode:** Prompt Gemini to act like a UK University Don—academic, rigorous, but encouraging.
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The Roles (The Strike Team)

- **Member 1: The "Intelligence" Lead (Gemini & ElevenLabs)**
 - **Focus:** API Orchestration & Prompt Engineering.
 - **Goal:** Ensure the AI actually sounds like a Socratic tutor and correctly chunks messy data.
- **Member 2: The "Infrastructure" Lead (Backend & Vultr)**

- **Focus:** FastAPI/Node, MongoDB Atlas, and Deployment.
 - **Goal:** Create the "Plumbing" so data actually saves and the frontend has a URL to talk to.
 - **Member 3: The "Experience" Lead (Frontend)**
 - **Focus:** React, Tailwind CSS, and Biometrics.
 - **Goal:** Build the "Cyber-Academic"
 - **Member 4: The "Data" Lead (Moodle & Career Scraping)**
 - **Focus:** Playwright/Scraping and Data Cleaning.
 - **Goal:** Be the "Pipe." Feed real (or high-quality mock) data into the system.
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The Sprint Schedule

Phase 1: The "Great Connection" (First 3 Hours)

- **Member 1:** Draft the **Socratic System Prompt** in the Google AI Studio. Test it with complex topics.
- **Member 2:** Spin up the **Vultr** instance and connect **MongoDB Atlas**. Create the `/tasks` and `/user-state` endpoints.
- **Member 3:** Scaffold the React app with a dark-mode theme. Integrate the **Presage SDK** camera feed component.
- **Member 4:** Use **Playwright** to log into a Moodle test account. Capture the HTML of the "Upcoming Events" or "Grades" page.

Phase 2: The "Deep Integration" (Hours 3–8)

- **Member 1:** Connect **ElevenLabs**. Write a function that takes Gemini's response and converts it to a "British Professional" voice stream.
- **Member 2:** Build the **"State-Aware" logic**: An endpoint that takes the Presage "Stress Score" and re-sorts the MongoDB task list.
- **Member 3:** Build the **Socratic Mirror UI** (a clean chat interface with a "Pulse" animation that syncs with the user's focus levels).
- **Member 4:** Build the **Career Scraper** (or a JSON injector) for LeetCode stats and Bright Network deadlines. Map these to the MongoDB schema.

Phase 3: The "Polish & Pitch" (Hours 8–End)

- **Member 1 & 2:** Squash bugs in the Gemini-ElevenLabs loop (latency is the enemy!).
- **Member 3:** Add "Wow" factors: Framer Motion animations, "Stress Alerts," and a sleek "Daily Briefing" modal.
- **Member 4:** Prepare the **Demo Data**. If scraping is flaky, hardcode a "Golden Path" for the demo that looks real (e.g., using your actual university modules).

The "Aura" Task Checklist (By Owner)

Owner	Task	Tech
Intel	Create "Feynman Mode" prompt for Socratic learning.	Gemini Pro
Intel	Map ElevenLabs voices to different "Aura" moods.	ElevenLabs
Infra	Set up Vector Search in MongoDB for the Socratic Mirror.	MongoDB Atlas
Infra	Deploy the backend on Vultr with SSL.	Vultr / Nginx
UX	Implement "State-Driven" UI (colors change based on stress).	React / Tailwind
UX	Integrate Presage SDK and map 0-1 scores to "UI Intensity."	Presage SDK
Data	Scrape Moodle "Assignment Brief" PDFs.	Playwright
Data	Create a "Job Description" parser for the career gap feature.	Gemini / Regex

Pro-Tip for the Team

The "10-Minute Rule": If any member is stuck on a bug (especially Moodle login or SDK issues) for more than 10 minutes, **pivot to a hardcoded mock**. At a hackathon, a working "fake" feature is worth 100x more than a broken "real" one.

Would you like me to generate the "Golden Path" script for your demo so the team knows exactly what to show the judges?