

🎓 Anti-Gravity AI Certification Coach: Comprehensive Development Plan

I. Project Goals and Monetization Strategy

- App Focus:** Adaptive learning platform for high-stakes professional certification exams (e.g., PMP, CompTIA, CFA Level 1).
- Core Value Proposition:** Guarantee the most efficient study path by using AI to identify and relentlessly test the user's weakest topics via a **Spaced Repetition Algorithm**.
- Monetization Model: Freemium with Tiered Subscription and Annual Discount** (best for fixed-duration study).

Tier	Price (Estimated Range)	Key Value & Features	Monetization Goal
Free (Core)	\$0/month	Discovery & Engagement. Access to the Topic Library, the initial 10-Question Diagnostic Quiz, and the Basic AI Study Calendar (fixed schedule).	Build large user base; gather initial data on user weaknesses.
Premium (Monthly)	\$15 – \$25/month	The Adaptive Tutor. Access to the full Question Bank, AI Adaptive Question Selector (Cloud Function), Confidence Tracking , and detailed Progress Analytics.	High recurring revenue; targets users needing flexibility.

Tier	Price (Estimated Range)	Key Value & Features	Monetization Goal
Lifetime Access	\$99 – \$199 (One-time)	Ultimate Value. Unlimited access to the entire chosen certification course content and future updates.	Maximize immediate revenue; targets high-commitment users.
Hybrid Revenue	In-App Ads (Free Tier)	Display relevant, non-disruptive ads at the end of practice quizzes. Ad-Free Option included in all paid tiers.	Monetize the large free user base without disrupting learning.

II. Legal and Risk Mitigation Strategy (Low-Risk Profile)

The primary goal is to mitigate claims of negligence, intellectual property (IP) infringement, and failure to guarantee results.

- **Mandatory Educational Disclaimer:**
 - **No Guarantee:** Must explicitly state that use of the app **does not guarantee exam success** or licensure.
 - **Not Professional Advice:** State clearly that the app is for **educational purposes only** and is not a substitute for professional, legal, medical, or financial advice.
- **Intellectual Property (IP) Compliance:**
 - **Question Originality:** All practice questions must be **original educational material** and not copies of actual exam questions (which is often copyrighted).
 - **Trademark Use:** Use exam trademarks (e.g., "PMP®," "CompTIA®") as **adjectives** in small font only. Include a mandatory footnote/disclaimer

stating that your app is **not affiliated with, endorsed, or sponsored by** the exam owner/regulator.

- **Data Protection:** Implement standard security protocols (encryption, strong authentication) to protect user study history and PII. (Note: Unlike the fitness app, this data is generally not subject to HIPAA or FERPA unless selling to schools, keeping the risk low).
- **Insurance:** Obtain **Technology Errors & Omissions (E&O) Insurance** to cover legal expenses and settlements from claims of negligence or mistakes in the service (e.g., a buggy answer key).

III. Technical Architecture (Same as Fitness App)

- **Single Firebase Project:** Shared services for efficiency.
- **Site 1 (Primary): Certification Coach App** (User-Facing) on Firebase Hosting.
- **Site 2 (Secondary): Admin/CMS App** for Question Bank Management on Firebase Hosting.
- **Backend: Cloud Functions** (Node.js/Python) for the Adaptive Question Selector.
- **Database: Cloud Firestore** stores **Mastery Scores** and the **Question Bank**.

IV. Minimum Viable Product (MVP) Feature Set

A. User-Facing App

Feature	Description	Technical Tie
Diagnostic Quiz	Initial 10-20 question quiz to establish a baseline Mastery Score for all topics.	Firestore (Read/Write)
AI Study Calendar	Displays the daily personalized study plan, adapting review dates based on Spaced Repetition logic.	Cloud Function Output
Adaptive Practice	Triggers the <code>getAdaptiveQuestions</code> Cloud	Core Subscription

Feature	Description	Technical Tie
Session	Function to pull a customized mix of hard/easy/re-review questions.	Value
Confidence Tracker	Simple user input after each question ("How confident were you?") used to penalize the Interval Factor in the AI logic.	Firestore (Write)
Progress Dashboard	Visual charts showing performance trends and topic-by-topic mastery levels (the conversion driver).	Firestore (Read)

B. Admin/CMS App (Content Management)

Feature	Description	Importance
Question Bank Editor	Secure interface to add, edit, and categorize practice questions by Topic , Difficulty , and Correct Answer .	IP/Content Quality
Answer Explanation Manager	Tool to ensure every question has a detailed explanation	User Retention

Feature	Description	Importance
	for both correct and incorrect answers (Educational Value).	

V. Core AI Logic: Adaptive Question Selector (`getAdaptiveQuestions`)

- **Goal:** Maximize learning efficiency by scheduling the hardest topics for review just before the user forgets them.
- **Core Algorithm:** Spaced Repetition (custom SM-2 model).
- **Input Data:** User's Mastery Score (M), Confidence Score, and Recency of Review (Interval Factor - IF).
- **Process:** The function uses the IF to prioritize topics flagged as **High Urgency** (M is low or user got it wrong recently) and then selects $\approx 70\%$ of the quiz questions from those high-urgency pools.

With this detailed plan, you are ready to build a high-value, defensible educational app.

