AI Tutor

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Introduction

Many students learning programming struggle without access to a knowledgeable tutor. Public AI chatbots can help, but only if users know how to craft precise prompts and piece together fragmented answers. This creates a barrier for learners who need clear, guided instruction rather than open-ended exploration.

Problem

- **Prompt Engineering Barrier:** Novices must learn to phrase questions effectively to get useful AI responses.
- **Fragmented Outputs:** Chat interfaces return isolated snippets; students spend time assembling coherent lessons.
- **Lack of Structure:** Without a tailored curriculum, learners cannot follow a clear progression through concepts.

Proposed Solution

We introduce a Digital AI Tutor that:

- **Automates Lesson Creation:** Generates a structured sequence of 10–30 lessons from uploaded materials or chosen topics, with no prompt crafting required.
- **Maintains Context:** Keeps each lesson's dialogue isolated so questions and clarifications stay focused on the current topic.
- **Provides Instant Assessment:** Creates and grades quizzes for each lesson, giving students immediate feedback.
- **Tracks Progress:** Presents a simple dashboard of completed lessons and quiz results to motivate and guide learners.

Impact

By eliminating the need for prompt engineering and manual assembly of AI responses, our AI Tutor makes programming education accessible to all students—especially those without human tutors—enabling self-paced, on-demand learning that is coherent, personalized, and efficient.

Conclusion

The Digital AI Tutor directly addresses key bottlenecks in AI-based learning: it removes technical hurdles, structures the learning path, and delivers instant feedback. This focused approach empowers students to master programming fundamentals with minimal friction.