Product Requirements Document (PRD)

1. Introduction

This PRD outlines the requirements for the "AI Study Buddy," a flashcard generator designed to help students create interactive flashcards from their notes. The project aims to provide a simple, effective, and monetizable tool for the education sector, specifically addressing SDG 4 (Quality Education). This document will detail the problem, solution, target audience, features, and monetization strategy.

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2. Problem Statement

Students often struggle with creating effective study materials, such as flashcards, from their notes. This process is time-consuming and can be inefficient, leading to a reliance on pre-made flashcards or ineffective study methods.

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3. Solution Overview

The AI Study Buddy is a low-code application that uses the Hugging Face Question-Answering API to instantly convert a user's study notes into a set of interactive flashcards. The application will be easy to use, with a straightforward text input and output interface.

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4. Target Audience

The primary target audience is students, particularly those in African markets, who need a

quick and easy way to create personalized study aids. This includes high school and university students preparing for exams.

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5. Features and Functionality

Core Features

- **User Authentication**: Users can **sign up** and **sign in** to the application to access their content.
- **Profile Management**: Users can create and manage their profiles.
- **Text Input**: A simple HTML textarea allows users to paste their study notes.
- **AI-Powered Flashcard Generation**: The application sends the user's text to the Hugging Face Question-Answering API to generate quiz questions.
- **Interactive Flashcards**: The generated questions are displayed as interactive flashcards using HTML, CSS, and JavaScript. Users can flip the cards to reveal answers.
- **Flashcard Storage**: Generated flashcards are saved to a MySQL database for future access and reuse.

Monetization Features (Freemium Model)

- **Free Version**: Users get **unlimited flashcard creation** but are limited to creating flashcards for a maximum of **three subjects or modules**.
- **Premium Version**: Users who upgrade have **unlimited flashcard creation** and **no limits** on the number of subjects or modules. In-app prompts will be used to highlight the benefits of upgrading.

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6. Technical Requirements

Tech Stack

- **Frontend**: HTML5 for card structure, CSS for styling and animations, and JavaScript for user interactions (e.g., flip cards).
- **Backend**: Python with the Flask framework to handle the logic and API calls.
- **Database**: MySQL for storing user data, flashcards, and subject information.
- **AI Integration**: Hugging Face Question-Answering API for generating flashcard content.

System Architecture

1. A user pastes text into the HTML textarea on the frontend.
2. JavaScript sends the text to the Python/Flask backend.
3. The Python backend sends the text to the Hugging Face API with the prompt: "Generate 5 quiz questions."
4. The API returns the questions and answers.
5. The Python backend saves the flashcard data (questions and answers) to the MySQL database, associating them with the user's account and chosen subject.
6. The Python backend sends the flashcard data back to the frontend.
7. JavaScript dynamically creates and displays the interactive flashcards.

Security and Fault Tolerance

- **Data Protection**: User data, including notes and flashcards, will be securely stored in the database.
- **Error Handling**: The application should gracefully handle errors, such as API timeouts or failed database connections, and provide clear feedback to the user.
- **Payment Integration**: IntaSend will be used to handle payments for the premium version.

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7. Success Criteria and Metrics

- **User Adoption**: Number of new sign-ups and active users.
- **Monetization Rate**: The percentage of free users who upgrade to the premium version.
- **Engagement**: Frequency of flashcard generation and reuse.
- **Customer Satisfaction**: Feedback from users on the usability and effectiveness of the tool.

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8. Release Plan

- **Phase 1**: Minimum Viable Product (MVP) with core flashcard generation functionality.
- **Phase 2**: Implement user sign-up/sign-in and profile management.
- **Phase 3**: Integrate the MySQL database for saving and retrieving flashcards.
- **Phase 4**: Implement the freemium model with IntaSend for premium payments.
- **Phase 5**: Add new features based on user feedback, such as more subjects, different quiz modes, or sharing options.