## **Project Idea – Smart Flashcards & Quiz Platform**

Our project, the **Smart Flashcards & Quiz Platform**, is a web-based application designed to help students create, study, and quiz themselves using digital flashcards. Users can create their own sets of flashcards, organize them into categories, and choose between study modes such as reviewing cards, taking quizzes, or using random shuffle mode. The platform focuses on simplicity and usability, making it a lightweight but powerful study tool.

Users will be able to register, create personalized decks, and add their own flashcards with terms and definitions. They can study their cards in different modes, including **flashcard review**, **multiple-choice quizzes**, and **self-testing**. A progress tracker will show users how many cards they’ve mastered and where they need improvement. The platform will also feature a search function for organizing cards and saving decks for future use.

The project will be developed using **Java** and **Spring Boot** for the backend, **MySQL** for storing user data and flashcards, and **HTML, CSS, Bootstrap, and JavaScript** for a responsive and intuitive front end. The goal is to create an efficient and user-friendly study platform that combines personalization with flexible learning options.

## **WRSPM Analysis**

### **World Assumptions**

* Users have access to the internet and a compatible device (desktop, laptop, or tablet).
* Students are comfortable creating their own study materials.
* Multiple users can simultaneously create, edit, and review flashcards.
* The system focuses on simplicity and self-paced learning.

### **User Requirements**

* User authentication (registration and login).
* Ability to **create, edit, and delete** flashcard sets.
* Add unlimited cards with a **term** and **definition**.
* Study flashcards in different modes:
  + Flashcard flip mode
  + Multiple-choice quiz mode
  + Self-testing mode
* Progress tracking (e.g., cards mastered vs. remaining).
* Search and organize decks by category or keyword.

### **Specifications and Interface Needs**

* **Frontend:** JavaFX
* **Backend:**
* **Database:** **Google Firebase** for managing user accounts, flashcard sets, and quiz scores.
* **Flashcard Interface:** Card-flip animations and dynamic rendering of decks.
* **Quiz Engine:** Randomized question ordering with instant feedback.
* **Analytics Dashboard:** Displays user progress and recent activity.
* **Security:** Password hashing, session handling, and role-based permissions.

### **Program and Hardware**

* **Programming Languages:** Java, CSS
* **Frameworks & Tools:** JavaFX
* **IDE:** IntelliJ IDEA.
* **Version Control:** GitHub repository for collaborative development.
* **Hosting (Optional):** Firebase for deployment.
* **Hardware:** Any standard laptop or PC with internet access.

**Team Meeting Schedule (Twice per Week)**

* In Person - Mondays and Tuesdays from 1:45 pm to 3:00 pm.

**GitHub Repo Link**

<https://github.com/Maximilianao/csc325-project>