MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 36 Issue 1, 2026, Pages 5803-5803

Digital Flashcard Mobile App

Arunasanti Dwi Maya[1], Krita Dakshina Kalika[1], Sri Yamuna Ismayawati[2]
Uma Ardwina Jayanti[1] , Ratna Ridya Indrani [1]
[1] Warga High School, Surakarta, Indonesia.
[2]Budi Laksana High School, Sukoharjo, Indonesia
Email: arunasanti.dwi.maya@gmail.com, krita.d.k3476@gmail.com, sriyamunaismayawati@gmail.com
umaardwinajayanti@gmail.com, ratnaridyaindrani@gmail.com

ABSTRACT
Studying for exams is not always easy, and many students use flashcards to help memorize important information. But carrying stacks of cards everywhere is not exactly practical. That is why our team created FlashPrep—a simple mobile app that lets students make and review digital flashcards on their phones. It is a more convenient and fun way to study, whether you're at school, on the go, or at home.
We built the app using MIT App Inventor, a free, beginner-friendly platform that allows users to design Android apps using block-based coding (MIT App Inventor, 2024). Our goal is to make studying easier, more organized, and accessible for everyone—especially during exam season.
KEYWORDS: mobile app; MIT AppInventor; flash cards; study tools; low code programming

Introduction:

Studying for your finals, or any exam in general, can be stressful and overwhelming, especially when there's so much information and so many formulas to memorize. That's precisely why we created our digital flashcard app — a simple, efficient, and powerful tool to help you learn and memorize material and make learning easier, faster, and organized. Unlike physical flashcards, these digital ones allow you to create and review your own flashcards—and the best part is, you can do it anytime, anywhere, as long as you have a device on hand.
This app was built using the MIT App Inventor platform (https://appinventor.mit.edu/), which is an online beginner-friendly app builder that allows users to use their imagination to create and design. It also has a built-in drag and drop feature, which enables users to program mobile apps easily. MIT App Inventor helped us turn our idea into a successful, functioning mobile app — no complicated coding needed.
Our main goal was to take the pressure and stress off studying by turning it into a more fun, interactive, and efficient experience. Now, with this, students can prepare for any upcoming exams with less stress and more confidence.

Methods and Methodology:

We made this flashcard app to aid us with our previous exams. How this app works is you can add questions and answers, save them into decks, and study them later. We used MIT App Inventor to build it because it uses coding with blocks to provide logic flow for the application. Within MIT App Inventor, we started by designing the app layout. We chose….
The first screen is used to make the flashcards. You type your question, answer, and deck name, then click save, and the app stores everything inside TinyDB. TinyDB is like a storage system on your phone, so the data stays even if you close the app. We also made it so if you create a new deck, it gets added to the list of decks automatically.

Figure 1 Front Screen Design

After we completed the layout, we then set up the coding block. This is where we program or decide what happens within the app. For example, when the start button is clicked….
Then we made a deck selection screen. This screen shows all the decks you've made. When you pick one, the app saves that choice as the "selected deck" and moves you to the test screen.The test screen is where you actually study. The app grabs all the cards from the deck you picked and shows them one by one. At first, it shows the question, and then if you click the "flip" button, it shows the answer. We also added "next" and "previous" buttons so you can move through the cards. The whole idea was to make it easy to create different decks for different subjects (like math, science, etc.), and then study them in a simple way. The hardest part was making sure the app knew which deck you picked and didn't mix everything together

3] Results: How the App Works

The "Digital Flashcard for Mobile Learning" application provides an interactive way for students to prepare for examinations through a simple and user-friendly process. Once the app is opened, users are guided to create a new flashcard set by entering a title and a topic of study. Each flashcard consists of a front side (question, keyword, or concept) and a back side (answer or explanation).
After creating their flashcard sets, students can review them in two main modes:
-Study Mode – Flashcards are displayed one at a time. Users can "flip" the card by tapping the screen to view the answer, simulating the experience of using physical flashcards.
-Quiz Mode – The app randomly presents flashcards in a question–answer format, allowing students to test their knowledge and track their progress.
Additional features include the ability to edit or delete cards, organize sets by subject, and reuse existing flashcard sets, as shown in Figure 3. Because the app is built on MIT App Inventor (a visual programming platform for building Android applications without advanced coding knowledge), the interface is designed to be intuitive for beginners, particularly students.
The results of our testing show that students were able to create, review, and quiz themselves effectively using the digital flashcards, with faster recall compared to traditional note-based studying. This demonstrates the practicality of the application as a mobile learning tool.

Figure 3 Flash Card Running

4] Discussion

While the current version of the application provides essential flashcard functions, several features could enhance future versions. Potential improvements include:

- **Progress tracking**, such as streaks, goals, or study reminders to motivate consistent learning
- **Collaboration features**, allowing students to share flashcards or study together
- **Offline mode**, enabling access to study materials without an internet connection

These additions would improve user engagement and provide a more dynamic study experience.

5] Conclusion – In conclusion we can see how this app can help students understand their course material or other subjects that they may be working with. Using the flashcard app will help them to quickly and easily understand and memorize any material academically assigned or otherwise that they may be working on. It will help them memorize and understand whatever subject they are interested in or working on. For example, in studying biology it can help them to understand the categories of living beings that the science teaches and how they were organized.

6] Acknowledgement:
We would like to express our sincere gratitude to Budi Laksana Middle School for giving us the opportunity to learn and develop our project.
7] Funding Statement: The authors received no **financial support** for the development of this project.
8] Conflict of interest: The authors declare that they have no conflicts of interest. The project was developed solely for educational purposes and without any commercial, financial, or personal influences.

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