

## Project Functionality & User Manual: Flashcard Study System

### 1. Project Name: Flashcard Study System

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### 2. Overview

The **Flashcard Study System** is a C++17 console application that provides a new way to retain information through the use of flashcards. With this application, users won't end up at a 'dead end,' unlike the usual linear lists. This is accomplished through the use of a Circular Linked List, a data structure that allows users to continually cycle through their card sets, mimicking an actual stack of flashcards. The system offers a form of persistent storage by saving the user's decks as text files within the user's local storage.

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### 3. Group Members & Work Distribution

Student Name	Work Distribution (%)
Dinh Gia Bao Ngo - U30653179	34%
Dang Cuong Nguyen - U96338337	33%
Khai Dong Nguyen - U76714282	33%

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### 4. How to Run

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g++ -std=c++17 -o project project.cpp
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After compilation, run the executable:

<b>Windows:</b>	project.exe
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<b>Linux/Mac:</b>	./project
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## 5. User Interaction Guide

**File Format:** Flashcards are saved as text files in the flashcards/ folder. Each line contains a question and answer separated by a pipe character |.

Upon launching the application, you will be presented with a Main Menu. Navigation is handled by entering the numeric choice corresponding to the desired action.

### A. Creating a New Flashcard Set

1. **Select option [1] Add Flashcard.**
2. **Enter Title:** Type a unique name for your deck (e.g., History\_Ch1) and press Enter.
  - The system will check if the title already exists in memory or on the disk.
3. **Enter Number of Questions:** Input the total integer count of questions you intend to add.
4. **Enter Content (Loops based on the count entered):**
  - **Prompt:** Enter question: -> Type question text.
  - **Prompt:** Enter answer: -> Type answer text.
5. **Save:** After entering all questions, the system asks Do you want to save this flashcard to file? (y/n). Enter y to write the .txt file to disk.

### B. Editing an Existing Set

1. **Select option [2] Edit Flashcard.**
2. The system will display all currently loaded decks with their index numbers.
3. **Select Index:** Enter the number of the deck you wish to edit.
4. **Sub-Menu Options:**
  - **[1] Edit title:** Rename the deck and the associated file.
  - **[2] Edit a question:** Select a specific question, then choose to modify:
    - (1) Question text only
    - (2) Answer text only
    - (3) Both
  - **[3] Add new question:** Append a new Q/A pair to the end of the deck.
  - **[4] Delete a question:** Select a specific index to remove a Q/A pair.
  - **[5] Save changes to file:** Writes your modifications to the disk.
  - **[6] Done:** Returns to the Main Menu.

### C. Reviewing (Study Mode)

1. **Select option [5] Review Cards.**
2. **Shuffle Mode:** The system asks Enable shuffle mode? (y/n).
  - Enter y to randomize the question order.

- Enter n to play them sequentially.
- 3. **Select Deck:** Choose the deck index you wish to study.
- 4. **Interaction Loop:**
  - The Question is displayed.
  - **Prompt:** Your answer: -> Type your answer and press Enter.
  - The **Correct Answer** is revealed below your input.
  - **Self-Assessment:** The system asks Did you answer correctly? (y/n).
    - Enter y for correct or n for incorrect (provides immediate feedback).
- 5. **Navigation:**
  - After every deck cycle, the system asks Continue to next flashcard ...? (y/n).
  - Enter y to jump to the next deck in the list.
  - Enter n to return to the Main Menu.

#### D. Deleting a Flashcard Set

1. **Select option [3] Delete Flashcard.**
2. Select the **index** of the deck to remove.
3. **Confirmation:** The system will ask Delete flashcard "[Title]"? (y/n).
4. Enter y to remove the deck from memory and permanently delete the .txt file from the disk.

#### E. Reloading Data

1. **Select option [4] Reload Flashcards.**
2. This forces the program to re-scan the flashcards/ directory and rebuild the internal Linked List. Use this if you have manually added or edited text files outside of the application while it was running.

#### F. Displaying All Decks

1. **Select option [6] Show All Flashcards.**
2. **Output:** The system lists every loaded flashcard deck currently in memory.
  - Displays the Index ID.
  - Displays the Title.
  - Displays the Total Question Count for each deck.
3. This is a read-only view.

#### G. Exiting

1. **Select option [7] Exit.**
2. Closes the application.

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#### 6. Statement of academic integrity:

We understand that there will no tolerance towards academic dishonesty, and that cheating will lead to an academic referral. We are aware of the identified behaviors that are considered violations of the academic standards for Undergraduate and Graduate students per USF policy.