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Ace It! Flashcards

Project Description

A. The goal of the app is to help the user study and memorize information.
B. It allows for the user to quiz themself using their phone, without needing flash cards.
C. The ease of use of a mobile device and the prevalence of mobile devices make mobile a good platform for studying with.
D. Accessibility, collaboration, and reduced environmental impact will benefit society.

Functional Properties

- Allow users to create flashcards
    - Gives users flexibility of study material
- Allow users to combine flashcards into quizzes
    - Lets users focus studying on certain topics
- Allow users to test themselves using individual flashcards or quizzes
    - Lets users study or look something up
- Allow users to import or export flashcards and quizzes
    - Allows users to share with friends, study groups, or classrooms

Use case models

Use case: Create flashcard
Actors: Users
Goals: To create a flashcard with a question and an answer.
Summary: The user enters a question and an answer. Optionally, they can enter a hint or tags to allow for better management.
Related use case: Import flashcards
Steps:

Actions	Responses
1. Select the option to create a flashcard.	2. Request a question and an answer.
3. Enter a question and an answer.	4. Request a hint, tags, wrong answers, and other optional information.
5. Enter any optional information.	6a. Show success dialog. 6b. Return to the menu.

Postconditions: A new flashcard was created.

Use case: Use Flashcard
Actors: Users
Goals: To test one's knowledge of the flashcard topic.
Preconditions: The system has a store of flashcards to pull from
Summary: When the user wishes to test themselves with the cards, they choose a card and are shown cards one at a time so the user can review the topic and guess the answer.
Related use case: Use Quiz
Steps:

Actions	Responses
1. Select a flashcard	2. The system displays a flashcard.
3a. View card answer	4a. Flip card to show answer
3b. View card hint	4b. Show card hint
3c. Move onto next card	4c. Display next card

Use case: Use Quiz
Actors: Users
Goals: To test one's knowledge of the quiz topic.
Preconditions: The system has a store of flashcards to pull from in the form of a quiz.
Summary: When the user wishes to use the quiz, they choose a quiz and are shown its cards one at a time so the user can review the topic and guess the answer.
Related use case: Use Flashcard
Steps:

Actions	Responses
1. Select a quiz	2. Display a flashcard from the quiz
3. Use Flashcard.	4a. If there are no more flashcards in the quiz, end the quiz and show overall results 4b. Display the next flashcard if there are any more flashcards in the quiz

Use case: Create Quiz
Actors: Users
Goals: To prepare a quiz based off of existing flashcards.
Summary: Creates a quiz the user can attempt or send to others to attempt.
Related use case: Import Quiz or Flashcard
Steps:

Actions	Responses
1. Select the option to create a quiz.	2. Request a choice of a tag or manual selection of flashcards
3. Select user choice.	4a. If the user chose manual, present user with a list of flashcards to select from 4b. If the user chose tag, prompt the user for a tag.
5. User enters selection.	6a. Show success dialogue. 6b. Return to menu.

Postconditions: A new quiz was created.

Use case: Import Quiz or Flashcard
Actors: Users
Goals: The user wishes to import a quiz or flashcard that was previously created by another user.
Preconditions: The system has access to a previously exported quiz or flashcard.
Summary: The user selects to import a file, and then selects which file to import
Related use case: Create Flashcard, Create Quiz
Steps:

Actions	Responses
1. The user selects to import a file	2.Display a file explorer to select which file
3. The user selects the file to import	4. Read the selected file and create flashcards

Postconditions: A new quiz or flashcard was created.

Use case: Export Quiz or Flashcard
Actors: Users
Goals: To share quizzes or flashcards with friends, study groups, and classrooms
Preconditions: At least one flashcard.
Summary: The user selects a quiz or flashcard to export and is given a file that they can distribute
Steps:

Actions	Responses
1. User selects a quiz or flashcard	2. The item is selected
3. User selects to export	4. The system generates an exported file

Postconditions: A file is generated for the user to share.

Scenarios

Scenario 1:
Steps:

Actions	Responses
1. Selects the option to create a flashcard.	2. Prompts for a question and answer.
3a. Enters "Solve for x: 3x-4=0" as the question.	4. Prompts for optional information
3b. Enters "4/3" as the answer.	
5a. Enters "3/4" as a wrong answer.	6a. Receives confirmation message.
5b. Enters "Add 4" as a hint.	6b. Returns to the main menu.
5c. Enters "math" as a tag.	
5d. Select the option to finish.	

Scenario 2:

Steps:

Actions	Responses
1. Selects the option to create a quiz.	2. User is prompted to choose manually or via tag.
3. Chooses 3 flashcards manually.	4. Quiz is created containing the 3 selected flashcards.

Scenario 3:

Steps:

Actions	Responses
1.The user selects a math quiz to export	2.The quiz is selected
3. User selects “Export Quiz”	4.The system displays “Exporting quiz”
5. The user emails file to students	6.The system generates a file and outputs it to the folder

Scenario 4:

Steps:

Actions	Responses
1. Selects the option to import a quiz.	2. User is prompted to browse for a file.
3. Chooses a file.	4a. Quiz is created according to file’s specifications. 4b. Sends a confirmation message. 4c. Returns to the main menu

Quality Attributes

- Resource Usage / Efficiency
    - Typical study sessions can be hours long, and we need to not only make sure the app can be open for that long, but also that the phone has enough battery for the user's other apps. We will make sure the app uses no more than 20% of the battery life per hour.
- Response Time / Usability
    - Time spent waiting for the app to load is time spent not studying. We will make sure that any system activity takes no more than 500 milliseconds to complete.
- Allowances for Reusability / Reusability
    - If we wish to maintain the app, we need to make sure the code can be easily expanded. We will ensure that the flashcard and quiz files are easily machine-readable and can be read regardless of version.

Projected members contributions and project outline

Projected member contributions:

Dakota: UI Design and Implementation, GitLab management
Grant Gilbert: Quiz development and testing
Alex: Importing and Exporting files implementation
Navdeep: Deployment and Support, Flash card development and testing

Projected timeline:

Oct 30: Graphical Design and Requirements finalized
Nov 6: Back end development
Nov 13: Prototype ready for testing
Nov 20: Bug fixes and Maintenance
Dec 5: App deployed to Google Play Store

Participation Journal:

Oct 3: Group meeting (all present). Brainstormed ideas. Could not decide on a project, each member to think about it and meet again next week.
Oct 10: Group meeting (all present). Decided on Flash Cards. Hashed out description, use cases, functional properties, and quality attributes.
Oct 14: Finalized project name, projected contributions, and projected timelines. Navdeep will create mock designs.