Jolyn Tan - Project Portfolio

PROJECT: Flashmind

Overview

Flashmind is a CLI-based flashcard app designed to help students memorise and revise important content. It is used mainly for questions that can be answered with a short answer or several MCQ choices.

Summary of contributions

- **Major enhancement**: added **the ability to start a quiz on a series of flashcards**

  ◦ What it does: Allows the user to start a timed quiz on a series of flashcards based on their tags. Users are able to choose one or multiple tags to quiz themselves on.

  ◦ Justification: This feature is a great enhancement for users who are looking to memorise content. Instead of just looking at the flashcard, users are able to test themselves in a timed condition and receive feedback from the system on whether their answer is correct.

  ◦ Highlights: This enhancement required a holistic understanding of how commands are received. The quiz function required an implementation of quiz mode, which locks certains command and allows a new set of commands to be executed.

  ◦ Credits: My teammate, Zhi Wei, helped to implement the timer in the quiz mode.

- **Major enhancement**: added **the ability to add two different types of flashcard: MCQ and ShortAnswer**

  ◦ What it does: Allows the user to choose whether they want their flashcard to have MCQ options or simply be a short answer flashcard.

  ◦ Justification: This feature enhances the user's learning experiences as flashcards are now more versatile, allowing users to have MCQ options for questions that are harder to remember.

  ◦ Highlights: This enhancement required a modification of storage, as well as a refactoring of the code to distinguish between MCQ and Short Answer flashcards.

- **Minor enhancement**:

  ◦ Split up the UI to return consecutive flashcards and the result to different displays.

- **Code contributed**: [Functional code] [Test code]

- **Other contributions**:

  ◦ Enhancements to existing features:

    ▪ Wrote additional tests for existing features to increase coverage

- Documentation:
    - Updated relevant sections of User Guide for all commands in quiz mode: #85
- Community:
    - Reviewed PR for treasurerPro (tP) (with non-trivial review comments): #30

Contributions to the User Guide

Given below are sections I contributed to the User Guide. They showcase my ability to write documentation targeting end-users.

Quiz mode

Starts a quiz using a particular flashcard index or with a with an optional time limit with units in seconds.
Format:

Format: `quiz INDEX [s/TIME_LIMIT]`

- Start a quiz using the flashcard with given index.

- User can answer the flashcard using the `flip` command (see 3.8).

- If the quiz is not answered within the time limit, FlashMind will skip the quiz and mark it as wrong.

- If the quiz time is not specified, the default time limit will be 15 seconds.

Examples:

- `quiz 8`: start a quiz on the flashcard number 8 with a default time limit of 15 seconds.
- `quiz 8 t/10` : start a quiz on the flashcard number 8, given time limit 10 seconds.

Quiz Tag mode

Starts a continuous quiz on a tag or a series of tags and an optional time limit with units in seconds.
Format:

Format: `quiztag t/TAG⋯ [s/TIME_LIMIT]`

- Starts a continuous quiz on all flashcards in the given tags

- Users can continuously use the `flip` command to answer the series of flashcards (see 3.8).

- If the quiz time is not specified, the default time limit will be 15 seconds.

Examples:

- `quiztag t/mathematics t/geography` : start a quiz on all the flashcards with tag `mathematics` and `geography`.
- `quiztag t/mathematics s/30` : start a quiz on all flashcards with tag `mathematics` with each quiz a time limit of 30 seconds.

Flip a flashcard

NOTE | Only usable in quiz mode (i.e after a quiz or quiztag command)

Format: `flip ANSWER`

- Short answer flashcards will accept any answer.
- MCQ flashcards will only accept numbers as an answer. The number must match an index of the choices.

Examples:

After `quiztag t/geography`, the flashcard below is shown:

What is the tallest mountain in the world?

Definitions: The answer is Mount Everest.

Tags: [geography]

Choices:

1. Mount Fuji
2. Mount Everest

The user can type `flip 2` to answer the flashcard correctly.

End quiz mode

NOTE | Only usable in quiz mode(i.e after a quiz or quiztag command).

Format: `end`

- Used to end a quiz if the user wants to stop the quiz without answering the flashcard

Contributions to the Developer Guide

> *Given below are sections I contributed to the Developer Guide. They showcase my ability to write technical documentation and the technical depth of my contributions to the project.*
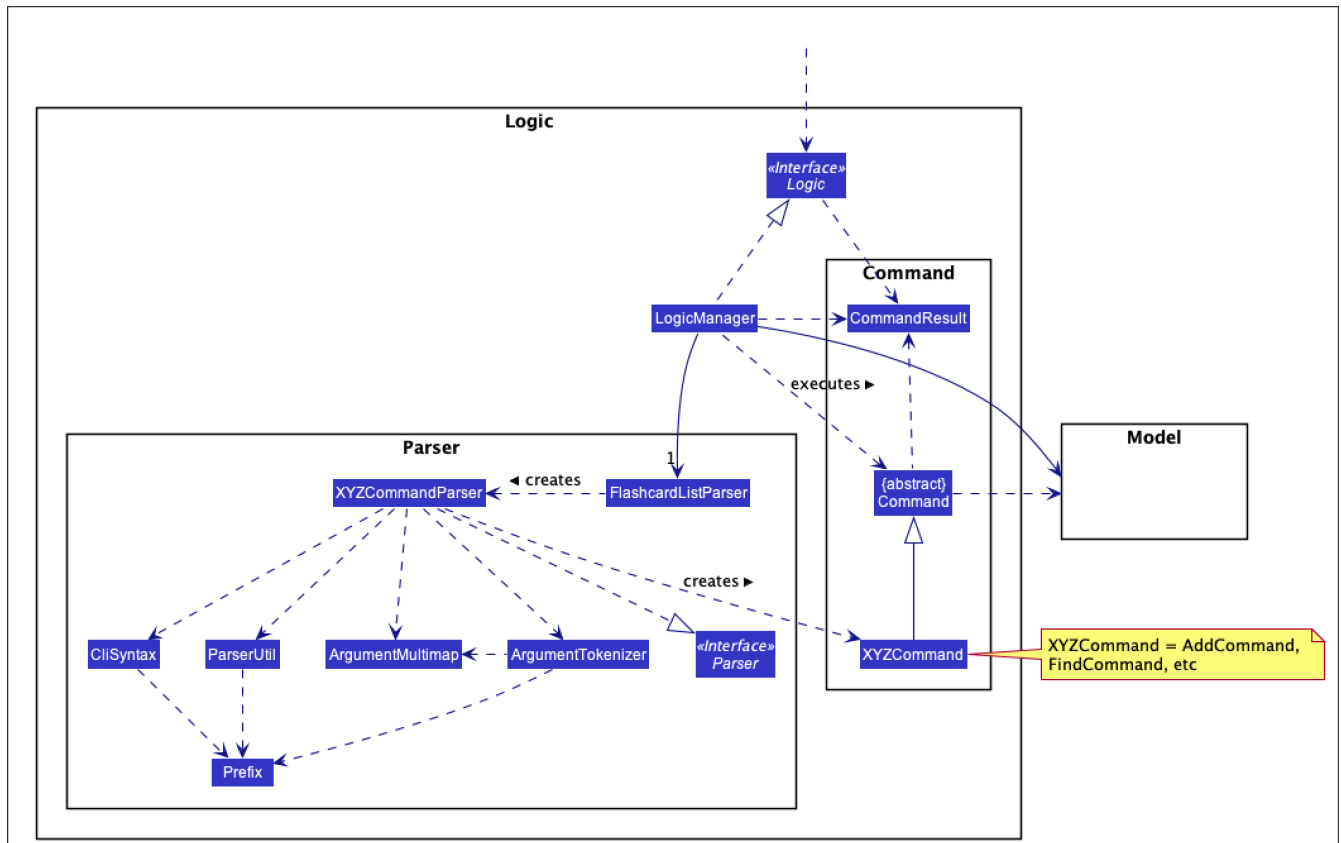
Logic component

Figure 1. Structure of the Logic Component

API : `Logic.java`

1. `Logic` uses the `FlashcardListParser` class to parse the user command.

2. This results in a `Command` object which is executed by the `LogicManager`.

3. The command execution can affect the `Model` (e.g. adding a Flashcard).

4. The result of the command execution is encapsulated as a `CommandResult` object which is passed back to the `Ui`.

5. In addition, the `CommandResult` object can also instruct the `Ui` to perform certain actions, such as displaying help to the user.

Given below is the Sequence Diagram for interactions within the `Logic` component for the `execute("delete 1")` API call.
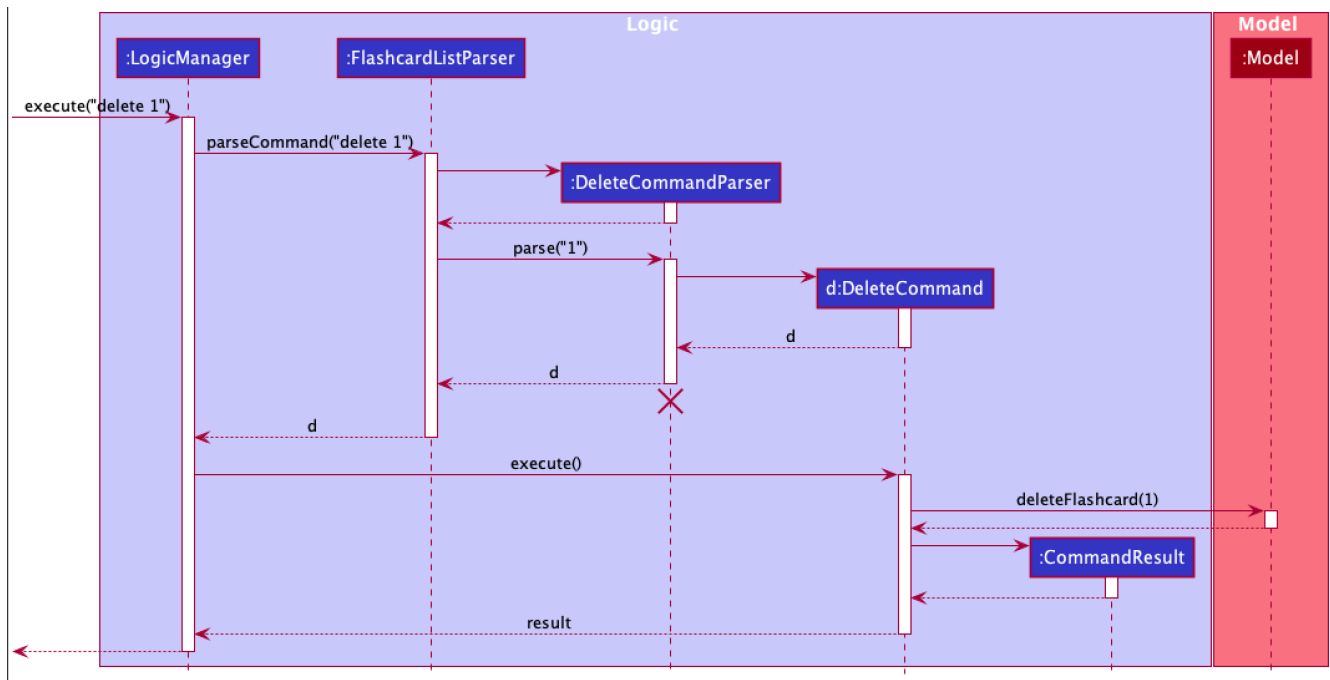
Figure 2. Interactions Inside the Logic Component for the `delete 1` *Command*

> **NOTE**
>
> The lifeline for `DeleteCommandParser` should end at the destroy marker (X) but due to a limitation of PlantUML, the lifeline reaches the end of diagram.

Quiz Tag feature

Alternatively, users can choose to quiz a series of tags instead of a single card. A list of flashcards will then be added to the list of quizable cards, which also triggers quiz mode, allowing users to use the flip command to answer flashcards consecutively. The following sequence diagram shows how the quiztag command works:
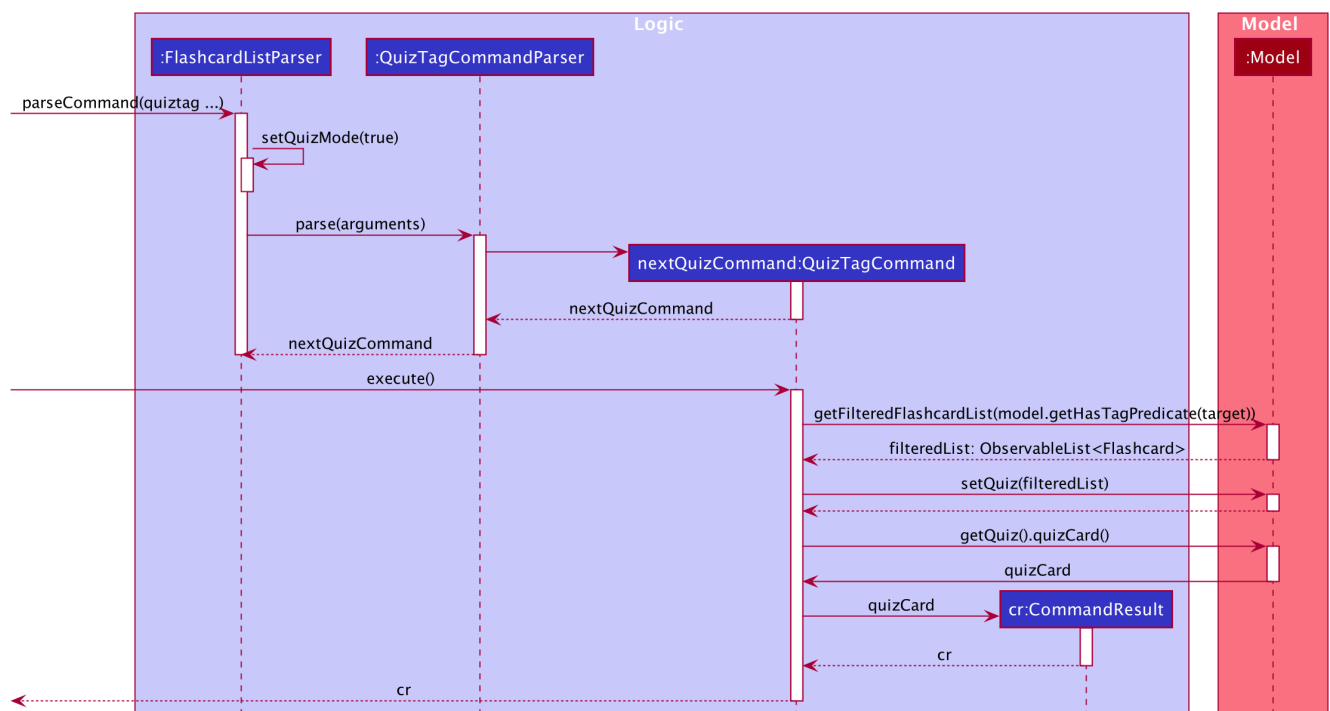

Figure 3. Component interactions for any quiztag command

Calling a quiztag command triggers the quiz mode, which is stored as a boolean in the FlashcardListParser. This is done with the consideration that there are different functions that can start the quiz mode (i.e quiz, quiztag), and others that can end the quiz mode (i.e flip, end, exit).

During quiz mode, the flip command can be called consecutively for as long as there are flashcards left in the quiz, as shown below:
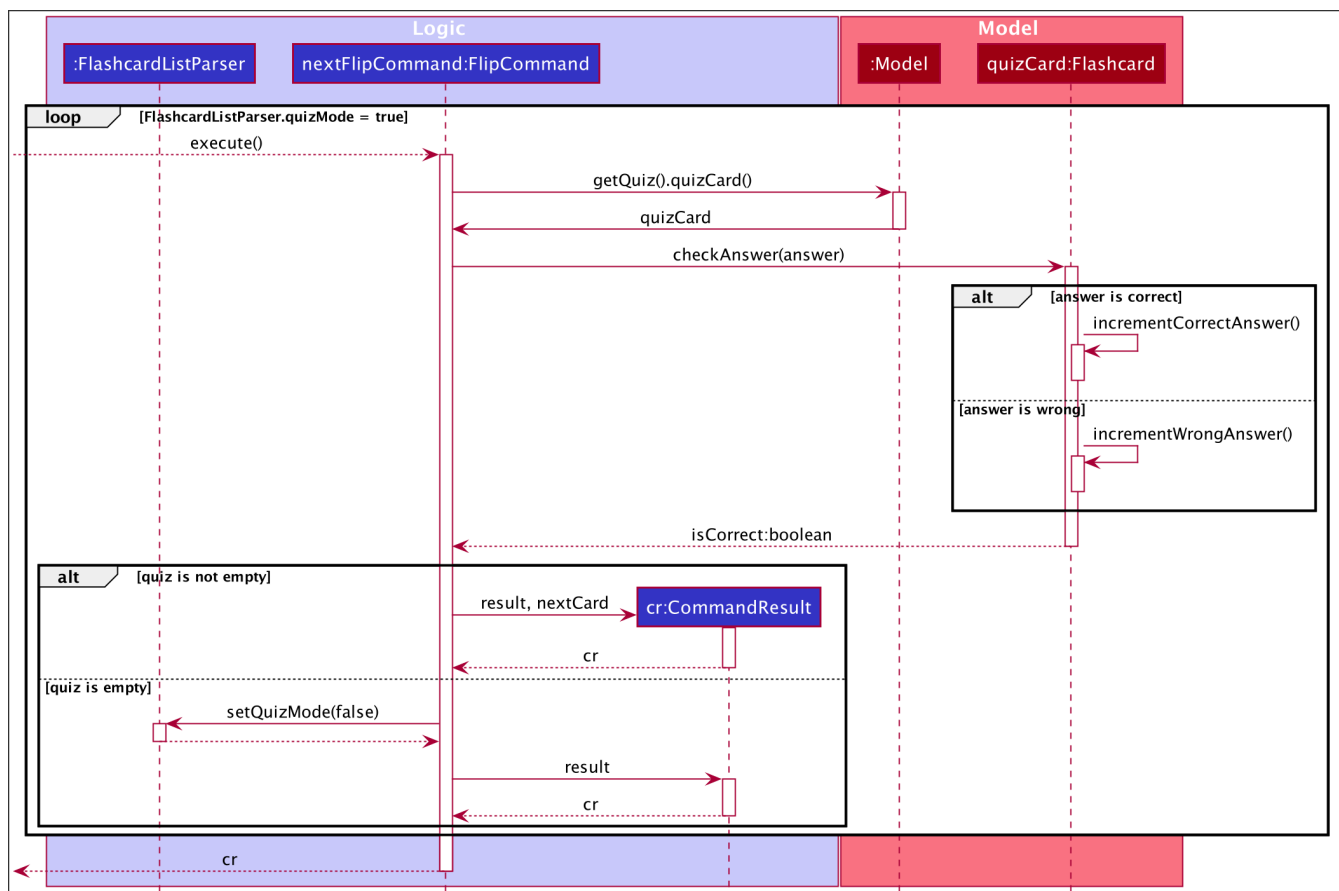

Figure 4. Flip command running and interact with the parser to toggle quiz mode

The flip command interacts with the model to check if there are any quizable flashcards. If there are none, the flip command toggles the quiz mode in FlashcardListParser off.

Contributions to the README

Given below are sections I contributed to the README. They showcase my ability to write documentation advertising the project.

PROJECT: Flashmind

{Optionally, you may include other projects in your portfolio.}