

Flow for Integrating Unordered List Memorization Into a Spaced Repetition Flashcard App

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Problem

How can we elegantly memorize unordered lists (such as *The Ten Commandments*, *9 Planetary Boundaries* or *countries in the EU*) with Spaced Repetition?

- being able to easily recite every item when prompted with the list title is the goal, but the list can't be memorized as a whole in one step
- list items sometimes relate to each other and sometimes don't, so it's not obvious whether we can model each item as its own learning item
- if we opt to prompt the learners to recall some elements of the list (e.g. "Here are items 1, 2 & 3; please remember 4 and 5"), we have a combinatorial explosion of possible exercises

Links

- [Repository](#)
- [Webapp](#)

Solution Concept

A wizard creation tool to generate a limited, stepped-difficulty set of flashcards to memorize a given list

- I implemented the concept as a creation flow in my karten app, a web-based spaced repetition app.
 1. The learner inputs the list they want to learn as markdown. Items are automatically detected.
 2. The learner selects how many flashcards they want to generate for this list.
 - One flashcard where only the list name is shown and every item is clozed is always included
 - The others are randomly chosen from all possibilities of cloze/show combinations and can be rerolled to find a balanced set
 3. The flashcards are automatically connected in blocking relationships, so that flashcards with more clozes — harder ones — are only presented after easier ones are learned.
- The flashcards are then integrated into the flashcard app, to be practiced in the traditional reveal-and-score paradigm.

Screenshots



Figure 1: List Editing & Item Detection

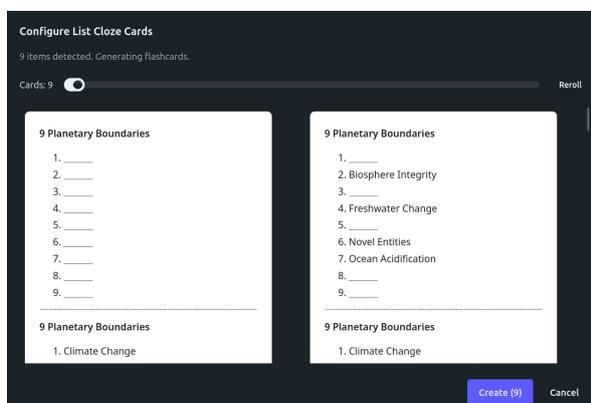


Figure 2: Setting up the desired number of flashcards

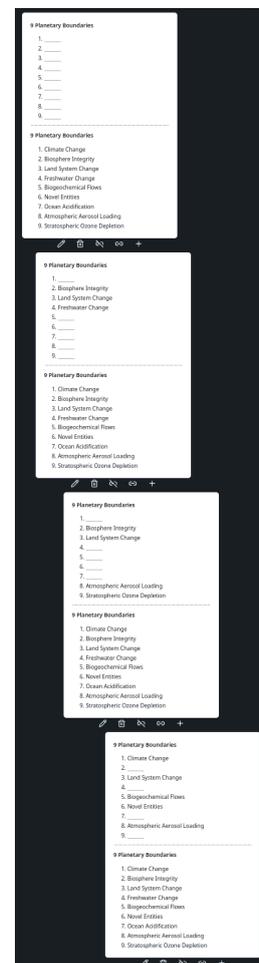


Figure 3: Visualization of flashcard relationships: Harder cards being blocked by easier cards