teach_SR

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Description

teach_SR is a web app that allows teachers to create and assign digital flashcards to students. Students will be prompted to review those flashcards based on a spaced-repetition algorithm designed to put the information on the flashcards into a person's long-term memory. Teachers are able to track student progress.

Features

- Create Cards: Digital flashcards can be created by teachers, and assigned to cohorts (groups of students).
- Review Cards: While logged in, students can review cards due for that day.
- Spaced Repetition: Students are prompted to review cards at a time determined by the spaced repetition algorithm.
- Teacher Oversight: Teachers will be able to view a student's progress on their reviews in cohorts the teacher created

Planning - User Stories

As a teacher, Sam can create a new cohort, or grouping of students. At the time of creation, Sam sets a password for the cohort. Students can join the cohort by entering Sam's email and the cohort password.

As a student, Molly wants to review her flashcards. She logs in, and clicks on the cohort she joined earlier. In this view, she can see how many cards are due for the day and begin her reviews. Upon completion, she will be notified that she is finished for the day.

Planning - Database

One to many relationships:
Deck to InsCard (one deck can have many cards)
User(owner) to InsCard, StuCard, Cohort, and Deck

Many to many relationships:
User to Cohort (one user can have many cohorts, and vice versa)
Cohort to InsCard

Two association tables: CardCohorts and UserCohorts

Technology Stack

- Python
- Flask
- Jinja2
- MySQL, SQLAlchemy
- WTForms
- Flask-login
- SR algorithm: SM-2

Demo

What I Learned

- Programming with a spaced-repetition algorithm
- Association tables for many-to-many relationships in SQLAlchemy
- Two new flask components: Flask-login and WTForms
- How to organize a large Python/Flask app

What's Next

- Analytics for students and instructors, e.g., a view that lists the percentage of students who guess a certain card correctly on the nth review
- Allow instructors to save cards locally as a .csv
- Allow instructors to share and upload cards (again using .csv files)