

FlashClash - Flashcard Study Application

By: Ishi Agrawal, Dominique Bornilla, and Tedy Barber

Introducing the project

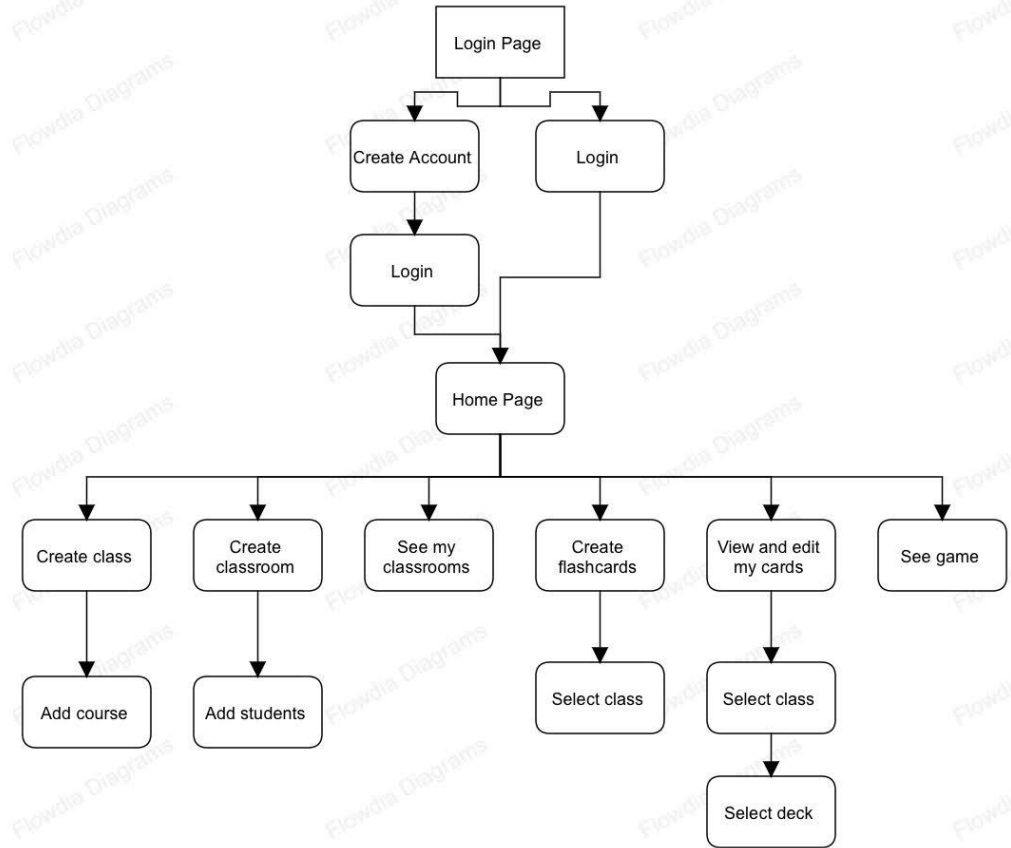
We aim to create a web application that helps students study with flashcards created by their teachers. Students will not have to create the flashcards, and can study more efficiently with multiple options.

Features:

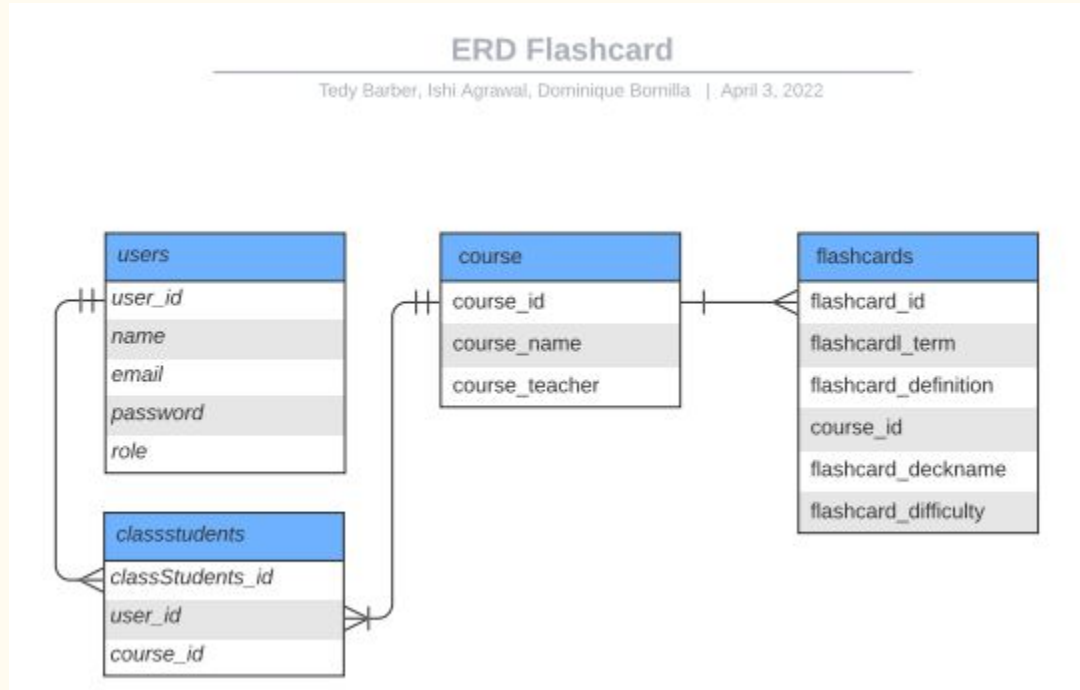
- 1) Register the teachers as admin and the students via their school information only
- 2) Have teachers be able to create, edit, and delete a study set of flashcards
- 3) Have teachers be able to create “classrooms” of students of the teacher’s classes
- 4) Be able to sort and study color-coded flashcards by multiple difficulty levels : Easy, Med., Hard
- 5) Be able to eliminate cards and continue studying left over cards from the flashcard set
- 6) Be able to study via a game

Tools and Technologies used: HTML, Bootstrap for CSS, JS, PHP, Heroku Postgres for DB, Heroku MemCachier for session support

Flow Chart



Entity Relationship Diagram



Team Members Roles and Responsibilities

Ishi Agrawal : *Lead Software Developer & Team Point of Contact with the Client*

-Code: Setup, Deployment, All Flashcard CRUD operations, registration & login, card study options & sort

Dominique Bornilla : *Lead Game Developer*

-Code: Flashclash game

Other: poster, report

Tedy Barber : *Team Point of Contact with Dr.Nelson/CS department & software developer*

-Code: Class creation, classroom creation and Classroom view

Other: report

Working with the client

Project Client: Timothy Koontz , Science Teacher at Timberline High School

Contact: tkoontz@nthurston.k12.wa.us

Continued to incorporate Client's feedback into project requirements

Testing/Evaluation by Client

March:

Client tested out login/registration by creating an account

Client created a few sample flashcards and deck

Plan for testing in **April:**

Client will have students sign up for the application and add them to classes

Client will create more cards and have students study the cards as needed for unit

Demo

Presented by Ishi Agrawal

Technical and Qualitative Restraints

Throughout the course of the project there were many difficulties

- 1) The depth of logic in PHP required lots of research and time
- 2) We realized we needed sessions in order to make the user experience better, this required a credit card to be put on the account to use a free Memcachier service, there was no work around to using a credit card.
- 3) We thought of using an email to email a one time pin to ensure only an actual teacher is registering as an admin, however this proved too difficult.
- 4) The plan was to use PHP and MySQL, but a change to PostgreSQL required using different syntax/tools for PHP to work with a DB.
- 5) We learned much later on that the use of cookies could be a security concern, thus a cookie disclaimer and lock on using the registration until acceptance had to be implemented.
- 6) Instead of having 2 students play against each other, we opted for a single player game
- 7) Setting aside flashcards was modified to eliminating some and studying from the remaining deck

Risks and Solutions

Reducing Security Risks :

- 1) We did not keep any student/teacher information besides their school issued email and the classes they are enrolled in. Only school domain emails were allowed.
- 2) No information about a person's age, date of birth, social security, or linking of outside social media accounts is involved.
- 3) Since one cookie is used for a session, a cookie acceptance alert is included. This must be accepted to create an account on the website. To register, this must be accepted, which means any user has already accepted to the use of cookies.

Passwords:

- 4) Students are encouraged to keep their passwords their school password

In the future...

- 5) If someone wants to continue this project, they can implement a feature to change passwords every 6 months for security and include the one-time-pin option for ensuring only existing teacher emails register as a teacher.

Schedule Updates and How it changed over time

Completed Tasks

Objective	Create and set up project platform and host on Heroku with necessary add-ons for session support
Objective	Login and Registration with validation with appropriate redirect
Objective	Create, View, Edit, and Delete Flashcards with term, definition, and difficulty levels if user is a admin for a course and deck
Objective	Add locks on website to restrict a student from accessing admin pages and functionality
Objective	Create a class
Objective	Study flashcards via 3 separate difficulty levels

In Progress

Objective	Add students to classrooms and view created classrooms
Objective	Study via game

Hard Deadline : April 13th

Objective	Further testing via client usage/feedback
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April 14th - 22

Addressing EAB comments from last time

Comments (project or team improvements/compliments):

*Your presentation was very well laid out and presented. Your purpose, team, engineering, and risks were well-defined and answered all my questions. For your schedule, I would recommend you include time for Q/A and end-user testing, so the final application works well and meets the users' needs. I would also recommend you adjust your next steps. Typically, that's defined as what needs to happen next, so, in this case, it would be the what, who, when of the front-end user interface design. I look forward to seeing what you create!

*In the flowchart, I did not see much detail on how flashcards were created and no detail on how students set flashcards aside (feature 4). I didn't see risks addressed. The schedule was not very detailed - do you have a test/validation phase? How will you know you met the customer's requirements? I like the topic selected and will watch to see how this turns out!

*Good project. Could be a struggle not knowing coding languages. Contingencies may include working with Subject Matter Experts (SME) to review code and design.

*A key part of any project success is obtaining customer requirements up front and then assessing achievement of those requirements at the end. Seems to me there might be more customer requirements than are noted in the presentation? I know resources are limited for this project, but it might be worthwhile to acknowledge all the customer's requirements and then work with them to prioritize. That way you will know at the end whether you have been successful.

Budget / Money Spent : \$0

Cost of hosting, database usage, and session support via Heroku turned out to be free if a credit card was added on the account. The credit card is not charged, but serves as account verification and gives increased access free to Heroku resources.

Team Member Ishi Agrawal's family credit card was added on the account. This will remain for 3 years, after which the client can add a credit if they choose to continue using the application. This agreement has been made with the client

Next Steps

When this project is fully implemented, the hope is that the teacher incorporates this as a study tool, hw, or classroom assignment for the students to study with. The client has already mentioned adding chemistry flashcards for a molecular geometry unit. This should serve as a valuable study resource.

Thank You