CSCE A401/601
Software Engineering Project

Team Name: The UAA Sea Ferrets
App Name: FlashCard McFlashCardy Face

Pat, Jaaliyah, Boro

Project Plan

1. Introduction to your project:

We're going to create the best flashcard application you've ever seen. Initially, we're going to build a simple application that allows users to create and store flashcards in the cloud as well as review them as desired. Users should be able to:

- Create / View Flashcards
- Edit Flashcards
- Delete Flashcards
- Share Flashcards with other users

Further, time permitting, users should be able to:

- Use image recognition to categorize the flashcards from pictures captured on their phones.
- Create training datasets from labeled flashcards.
- Access the flash cards through a mobile device
- Set review schedules
- Export the flashcards to various formats
- View data about their recall rate, progress, etc.

While the details of the implementation haven't been decided on yet, we're initially leaning toward:

- Python based backend that can support multiple front ends

- At least a browser based front end
- Serverless infrastructure such as AWS Lambda to run the application

Ultimately, as part of this project we plan to learn the following skills:

- UI/UX Design
- HTML, Javascript, CSS
- Cloud Infrastructure Design
- DevOps and CI/CD implementation
- Python and various front-end tools for the web
- Potentially rudimentary iOS development.

If we can get a working Minimum Viable Product (MVP) implemented there is no reason why we couldn't monetize the application. We don't need to charge users for it - we can monetize the flashcards as "training data" for companies working in the AI/ML space. We could provide a B2B solution where both students and AI can learn about a field.

2. Roles & responsibilities of team members in the project:

Project Manager / System Architect / DevOps:
Pat
Front-End Supervisor:
Boro
Back-End Supervisor:
Jaaliyah

Pat:

Pat will be responsible for planning the project task schedule, ensuring that all the pieces are properly put together, and that deployments go smoothly. Furthermore, Pat will be responsible for learning / completing any required tasks assigned by Boro or Jaaliyah in the front-end or back-end space.

Practically, this means that he will make sure that the meetings go smoothly, the planning happens properly, and deployment goes without any hiccups. He will be responsible for maintaining the duty assignments in Pivotal Tracker and solving any Git /

Github related problems as they arise. If code cannot be written or deployed smoothly, it's his responsibility.

Additionally, any presentations or planning documents will be handled by Pat.

Boro:
Boro will be the front-end team expert. She'll ultimately be responsible for how the app looks and feels as well as determining the appropriate connections between the front-end and back end. Ultimately, for design choices, if the user sees it - Boro is the final authority.

Practically, this means Boro will be responsible for making sure that front-end code is completed on time, that it meets the agreed upon specifications, and she assigns the front-end responsibilities to the other team members as required. She'll be the final say in design and user experience.

Additionally, Boro will be the "team scribe" and write out the required reports that will go to Prof. Kominiak.

Jaaliyah:
Jaaliyah will be the back-end team expert. She'll be responsible for all back-end / API decisions and planning. She'll decide the structure and shape of the data we use as well as how it'll get processed "under the hood." The choices she makes will sculpt the data model and controls of the application as well as generate many of the limitations on the front-end and deployment model. If it is behind the scenes - she'll have the final say over the structure involved with the application.

Practically this means that Jaaliyah will be responsible for ensuring that back-end code is completed on time, that it meets the agreed upon specifications, and she assigns any back-end responsibilities to the other team members as required. She'll be the final say in the design of the back end and data model of the application.

Jaaliyah will watch the other team members backs' and provide feedback on the written work we submit.

All Team Members:
Generally speaking, all decisions will be made by consensus with the final authority in difficult decisions being granted to the people listed above. Consensus decision can be a challenge, but with all parties agreeing to defer judgement to the appropriate subject

matter expert listed above, we believe that the project can be completed efficiently and professionally with minimal delays.

All team members will write tests for their code and properly document their work. Comments aren't documentation. We emphasize readability over cleverness and clarity over speed. It's a flashcard app, not a missile guidance computer.

3. Risk analysis:

Again, it's a password app not a missile guidance computer. Security is important, but the biggest risk is exposing user passwords. We should warn users not to put data in the app that is sensitive.

To mitigate the risk of a databreach, we plan on using https to send information to and from our service, and storing all passwords in an encrypted state.

4. Hardware and software requirements:

Hardware:

We intend to use an off the shelf cloud storage / processing provider. The specifics are TBD.

If we make it that far, we'd work with iOS on the iPad and iPhone.

Cloud Provider for processing… decide who later during specifications

Software:

Front-end:

HTML / JavaScript / css / etc. Pyscript?
Swift maybe if time permits to create full mobile app

Back-end:

Python
Flask? Boto3 AWS Client? Something to do the heavy lifting for us and the associated libraries.

Tooling:

IDE of developer choice
Git / Github
PivotalTracker
Google Sheets / Docs for written work
Code specifications in markdown in code or google doc as req'd

5. Work breakdown and milestones:

Weekly Meetings:

The team, believes that an official weekly meeting will facilitate communication and build intra-group solidarity. One time per weekend (usually Saturday) we'll meet and discuss the specifics of the project and assign the following weeks duties.

We'll work together to approve any changes to duty assignments in PivotalTracker as well as discuss roadblocks, etc.

Ad-Hoc Meetings During the Week:

We will meet before class on Tuesdays / Thursdays as necessary. Options include Facetime, Discord, Zoom, or in person.

Asynchronous Work Scheduling:

We'll assign scheduled work during our weekly meetings, however we do not need to be in the same place to get the work done. It's 2022. It's less important that we're "there" than that the work gets completed prior to the deadline.

We're all adults with lives and other responsibilities. It is the firm belief of the PM that people work best when they can work when and how *they* want to. If someone wants to write code at 3am on a Tuesday, they don't need anyone to watch their every keystroke - similarly, it is their responsibility to use the appropriate channels (Discord, text, phone, smoke-signal, documentation) to advise the others of any important changes they've made.

6. Key dates:

The following chart details the course requirements from the syllabus and serves as a primer to decide our internal due dates for work. The due dates we assign ourselves will mostly be in advance of the course requirements to give us a slight buffer to solve any issues that arise.

While the majority of the work will be broken down into smaller chunks in PivotalTracker, the key dates are listed below.

Syllabus Due Date:	Required Work	Team Completion Date:
12 SEPT 2022	Project Plan Completed and Submitted	10 SEPT 2022
26 SEPT 2022	System Requirements Documentation Completed and Submitted	24 SEPT 2022
17 OCT 2022	System Architecture Completed and Submitted	15 OCT 2022
24 OCT 2022	Iterative Development Plan Completed and Submitted*	22 OCT 2022
22 NOV 2022	Software Deployment Plan Completed and Submitted*	20 NOV 2022
29 NOV 2022	Project Complete and Ready to Present	27 NOV 2022
15 DEC 2022	Peer Review Complete and Submitted for final evaluation.	15 DEC 2022

* If we've done our job right, both the iterative development plan and the deployment plan should follow nicely as part of our work. This should be an extremely simple requirement where we just need to write a little bit about how we iterated, tested and deployed. All of which should be well documented already.

7. Reporting practices:

Boro will be responsible for writing a status report for Nina Kominiak as required that will be reviewed by the team as part of the Saturday meeting before submission. Pat will ensure all the tasks are in PivotalTracker and Jaaliyah we'll make sure that our work is of high quality and reflects the reality of the current situation.

We will use PivotalTracker to schedule work, Git / Github for source control, and Google Docs / Sheets, as well as copious documentation of sourcecode stored on Github as required. The deployment pipeline will be orchestrated through GitHub actions and the occasional bash script.

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Flashcard McFlashcardy Face
September 9, 2022

- Executive Summary:
  Project is progressing nicely, we developed a plan and spent some time figuring out the next steps to take. The team is learning to use the tools they need to have and the structure of meetings / scheduling of job tasks is progressing nicely. We have a way to go, but this is just the beginning.

- Project Plan Development:
  - All team members contributed equally to the success of this project this week. Project plan is simple enough to be feasible but flexible enough to be agile.

- Reporting:

  Work / labor time breakdown by group member:

  Pat - 50%
  Boro - 25%
  Jaaliyah - 25%

  Executive Summary:

  Boro created a report format and started report work.
  Jaaliyah spent time gathering resources and brainstorming work as well as editing / expanding on written work.
  Pat started building CI/CD pipeline.

- Software development:
  - Pat created a repository for the project and started managing the project.
  - Pat wrote a discord bot and associated github action to alert our channel when code is pushed to develop.
  - Pat created code pipeline skeleton (much work remains).
  - Pat documented git process.

- Status of the work:
  1. Planned tasks for the next two weeks and responsible party:

     - UI design - Boro with assistance from the rest of the team.
     - Back-end Design / Platform selection - Jaaliyah with assistance from the rest of the team.
     - Explore visual detection and recognition features - Pat with assistance from the rest of the team.
     - Write some prototype code (back-end and front-end) - All team members.

- Integrate deployment pipeline with selected platform - Pat with assistance from the rest of the team.
- Learn more! (everyone).

2. Tasks in progress:
    - Designing the project - all team members.
    - Performing the analysis of software development and hardware - all team members.
    - Configuration of the developing environment - all team members
    - Documentation.

3. Tasks completed:
    - We came up with the project idea.
    - Completed an initial project plan.
    - Built start of deployment pipeline.
    - Next week’s work in PivotalTracker.