sddec22-01 | Jack-o-Lantern Tracker

Week 4 Report

2/20/2023 - 2/26/2023

Client
Nathan Brockman

Advisor
Judith Islam

Team Members
Kyle Goben – *Team Lead, Frontend*
Kiara Sta. Maria – *Frontend*
Omar Muhammetkulyyev – *Backend*
Phuoc (Johnny) Nguyen – *Backend*

Weekly Summary

This week, we met with Nathan, our client, to discuss requirements with printing/choosing stencils for the admin. We also showed him what screens we have so far with the volunteer side. More details can be found at the end of this document.

In class, we also did an activity for our project's personas where we listed information about our client's needs, expectations, goals, etc. As for the team's work progress, the SQL script is finished and deployed to the server. We are also in the process of having a unified, comprehensive list of application requirements as well as polishing and creating user screen sketches.

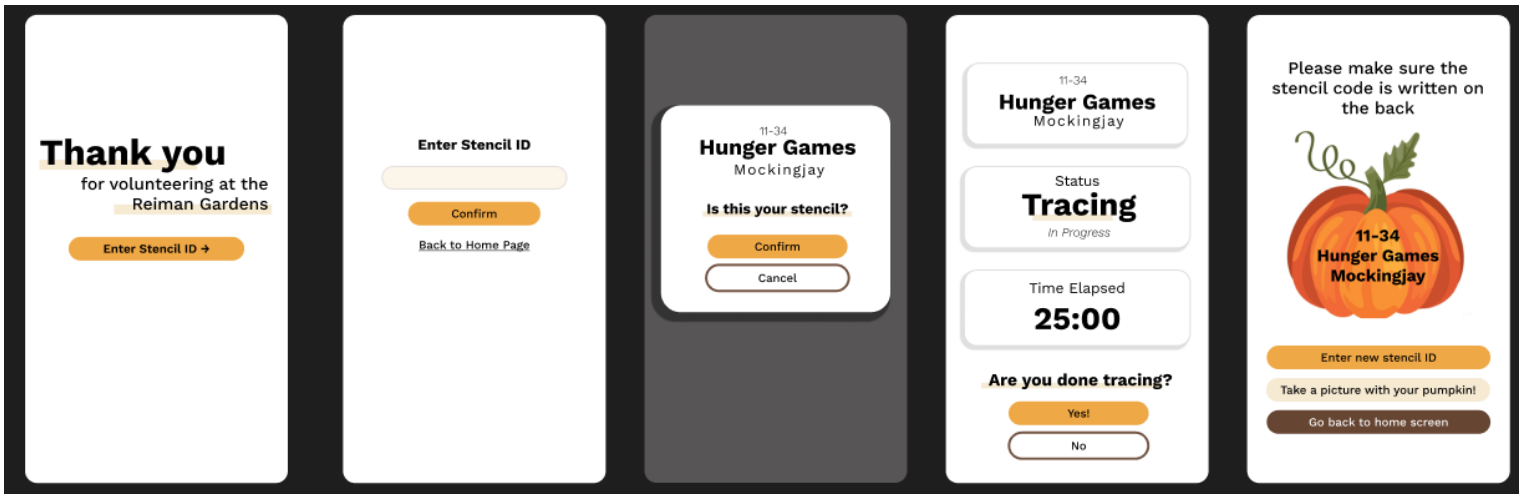

Figure 1. *Improved design for user screen sketches for volunteer logging.*

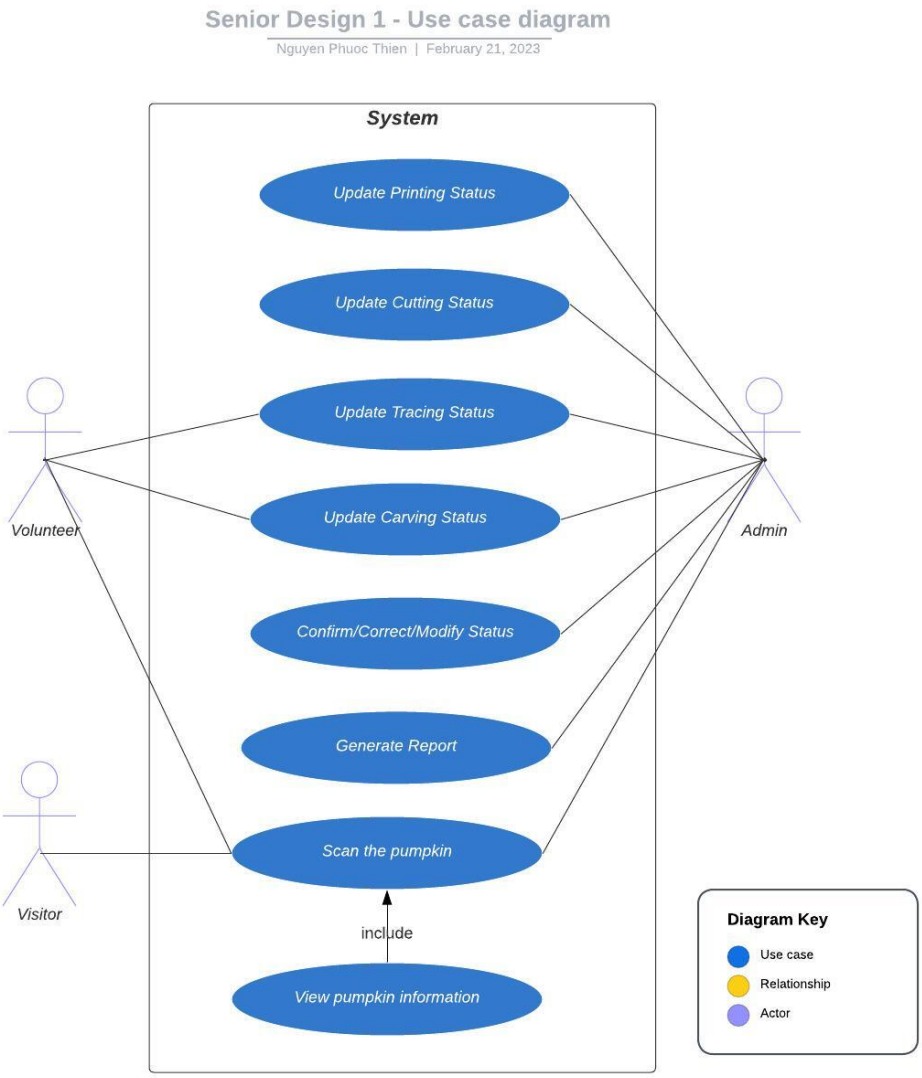

Figure 2. *The Use Case Diagram of our project design. This design will be improved in the upcoming weeks based on feedback from the team, client, and advisor.*

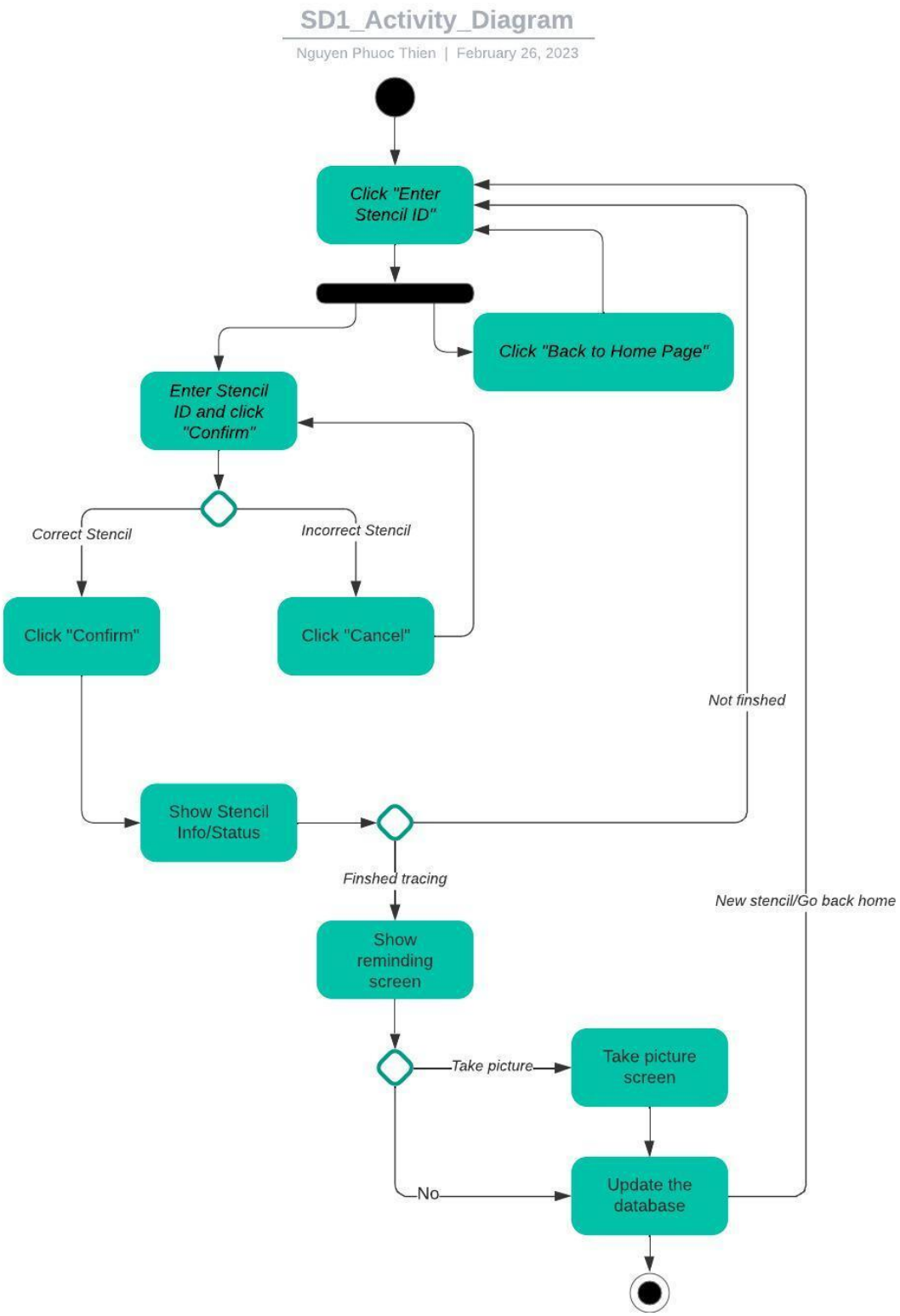

Figure 3. *The Activity Diagram of Update Tracing Status. This design will be improved in the upcoming weeks based on feedback from the team, client, and advisor.*

Pending Issues

I. Team's Work Progress

- Build up and improve upon use case diagrams
- Have a list of all possible use cases and features associated with the app. Also begin screen sketches for the admin side.
- Connect the node server with the database instance that is hosted on our VM
- Write a project description to add to the website

II. Individual TODOs

- Kyle
  - Generate some template code for each of the admin screens
  - Work on improving some of the styling with the current volunteer screens with .css
  - Write the required api requests to return dummy data for each of the buttons on the volunteer side of the application
  - Continue to update and add info to the team website
  - Continue to update the VM with an updated docker container regularly
- Omar
  - Research how to work with SQL database in NodeJS
    - Watch tutorials on how to make a connection
    - Learn the conventions used when setting up the query functions
- Johnny
  - Create UML diagrams for the whole project.
- Kiara
  - Get started with initial screen sketches for the admin side to get feedback first before adding more details.
  - Create/update diagrams
  - Compile requirements in a unified, comprehensive document
  - Research on how to code on React/Next.js.

Individual Contributions

	Tasks Accomplished	Hours this week	Hours total

Kyle Goben	• Meeting with the team and client
	• Send emails to Client and Advisor.
	• Researched CI/CD pipelines and how to implement them with GitLab.
	  ○ Decided to move on after several hours of work
	  ○ Think there might be a better use of time for the current moment
	• Deployed a docker image on the server manually
	• Set up a basic api request to use for getting pumpkin info
	  ○ This request currently just sends the same pumpkin data every request
	• Connected a screen to show the data received from the api request
	• Did research about how to connect the database to the node instance and generated some of the template files to do so
	• Created a component for displaying pumpkin data on multiple screens
	• Passed the component into 2 of the screens
	• Got access to the website
	  ○ Uploaded reports and 2 of the design documents
	  ○ Added member names and pictures
	  ○ Added a brief project description - needs work
	  ○ Linked team repo to the website
	  ○ file://sdweb.ece.iastate.edu/sddec23-01/www/index.html#teammembers
		12	34

Omar	• Meeting with the team and client. • Researched NodeJS and how to get started with backend request listening.	6	24
Kiara Sta. Maria	• Meeting with the team and client • Editing screen sketches • Professionalism Assignment • Weekly report 4 (summary and client notes)	8	26

Phuoc Nguyen (Johnny)	• Meeting with the team and client. • Created a complete SQL script with data. • Deployed the SQL script to the ISU server. • Create use-case and activity diagrams. • Researched the connection between the database and the web server. • Researched CI/CD pipelines and how to implement them with GitLab. • Generated the Report 4.	8	26

Plans for Next Week

Next team meeting on Mar. 1st (Wed) – *Everyone*

- Discuss the work that has been completed since our meeting on the 21st.
- Review the front-end prototype and find ways to make improvements to further develop the design
- Review the Use Case and Activity diagrams and suggest necessary changes to the flow.

Next advisor meeting on Mar. 1st (Wed) – *Everyone*

- Show the ER, use-case, and activity diagrams we have so far.
- Ask for possible guidance with deployment.

Summary of Client Meeting

February 21, 2023 (3rd client meeting)

Things to keep in mind

- Don't show images of stencils to the public because of copyright issues.
- The web app should be maintainable to the user over the years. For example, instead of occupying large data for stencils, is it possible to direct storage to a local/drive folder.

Feedback on volunteer logging screen

- Best to only show ID and stencil name to volunteers when inputting code and verifying pumpkin
- If another person typed in a code to work on a stencil and another person is already working on this stencil, show that it is already being worked on.
    - or i.e., in this time period, only stenciling or carving can happen.

Selection process for stencils (admin side)

- This process will be done in a big screen (i.e., projector) by a small committee ~5 people

- Here, it will be essential that the group will see a bunch of stencils at a time so that they can select faster
- Selection process can be done over a period of time so saving selections will be crucial.
- *Important things to keep in mind:*
    - Development choices should be geared towards improving the efficiency of the process.
    - Let admins have as much setting as they need.
    - Evaluate frequency and load of server calls - should be kept at a good amount/pace.
- *Features:*
    - Show thumbnails of the stencils
    - Have a visual note that will specify which weeks a stencil is used
        - Like selection colors. One color for week 1. Another color for week 2.
        - Specifying how many weeks are there in an event should be a setting.
    - Automatic saving. Developers need to evaluate what is a good amount of selections to automatically save to prevent expensive server calls.
        - *Idea:* Maybe also have the possibility to save as the user wants (save button)
    - Selections should have a grand total and per category/week totals
    - *Idea:* Automatic/Option to set a bookmark (like in a Word Doc)

Cutting stage

- Volunteers often ask for a bulk (~50) stencils to cut. It is best not to keep track of which users have the stencils to cut since this only decreases efficiency.
- However, it is good to have a system that will mark a stencil to “cut” status once the stencils are cut. This should also be fast because cut stencils are often finished as a bunch.
    - The fast entry system can use QR code or AI.
- **Issue with this process:** Some stencils are not brought back after a volunteer requests for a bulk to cut.
    - So, it’s important to have a feature to print all stencils that aren’t back/missing

General features

- Have an overall, general edit for stencil(s).
    - *Idea:* Have a mass-edit feature.
- Toggle for modes (stenciling, carving)
    - Box to put in stencil code and confirm vs. going through a long find edit.
- Better to search by number/stencil code because names can be the same sometimes, and it’s more efficient to search by number.

Other notes

- Can tell them anytime we want to have a server setup using whatever technology we need.
- PDFs for stencils were cleaned for the AI

Long-term features discussion

- Possibility of storing volunteer information with regards to their carved pumpkin.
- If we're storing pictures on the server side, a possible feature is to batch download at the end of season to maintain high server storage space.

The next client meeting will be on Tuesday, March 7, 2023.

Summary of technology use:

- **Next.js** is a popular open-source React framework used for building server-side rendered (SSR) web applications. Here are some of the advantages of using Next.js:
    - Improved performance: Next.js offers server-side rendering, which improves page load times and the overall performance of the application.
    - Automatic code splitting: Next.js automatically splits the code into smaller chunks, which speeds up the initial loading time and reduces the amount of code that needs to be downloaded.
    - Large community and support: Next.js has a large and active community, which means there is a lot of documentation and support available for developers who encounter issues or need guidance.

- **MySQL** is a popular open-source relational database management system with several advantages, including:
    - Scalability: MySQL can handle large databases and scale up as your data grows, making it suitable for small to large-scale applications.
    - Flexibility: MySQL is flexible enough to run on different operating systems, including Windows, Linux, macOS, and others. It also supports different programming languages such as PHP, Python, Java, and many more.
    - High performance: MySQL is optimized for performance, speed, and reliability. It uses indexes and caches to optimize query execution time and has an efficient storage engine that enables fast read and write speeds.
    - Security: MySQL provides several security features to protect your data, including encryption, user authentication, access control, and data backups.
    - Cost-effective: MySQL is open-source software, which means it's free to download and use. This can be a significant advantage for small businesses or startups with limited budgets.

- Community support: MySQL has a large and active community of developers and users who contribute to its development and offer support through forums, online resources, and user groups.