SE / CybE / CprE / EE 492 - sdmay23-04

Engineering Art

Weeks 10-11 Report

03/25/2023 - 04/07/2023
Client & Faculty Advisor: Rachel Shannon

Team Members:

Derrick Brandt - SE, Researcher, Figma Wizard, Frontend Team
Ayden Boehme - CprE, Researcher, Frontend Team
Tomas Elias - SE, Researcher, Note Organizer, Frontend Team
Elizabeth "Liz" Fransen - SE, Researcher, Communications Guru, Backend Team
Shelby Murray - CprE, Researcher, Notetaker, Backend Team
Juno "Winter" Robertson - SE, Researcher, Android Expert, Frontend Team
Cosette Thompson - EE, Researcher, Electrical Expert, Installation/Backend Team
Nathan "Nate" Underwood - CybE, Researcher, Security Expert, Backend Team

Parker "Park" Smith - Consulting Industrial Design Student, Installation Team
Johnny DiBlasi - Consultant, Assistant Professor of Art and Visual Culture at the College of Design

Weekly Summary

Each team worked independently on implementing our version 1 of the project. Backend focused on getting MATLAB integrated on the server, while frontend worked on the structure and reusability of the interface. The Installation team completed testing and experimentation with CRTs and a DJ board from KURE. We also acquired a new tablet for the installation, as the original one checked out through the university was not advanced enough.

Weekly Advisor Meeting Summary

We only met with Dr. Shannon once during this period due to her graduate school requirements and oral presentation.

During the meeting, we spoke about the goals leading up to our user testing in the SIC on April 21st, from 10:00 AM to 4:00 PM. This included integration testing of backend, frontend, hardware, and EEG device before the scheduled user testing, which we will begin progress on by holding our weekly Monday meetings in the Senior Design Lab as "Work Sessions". Additionally, we informed Rachel about the progress we had made since the last meeting. We also discussed the pending issues we were still having which included the need for backend implementation of flags from which the frontend can pull data from.

Past Accomplishments

Week 10:
- Updated Dr. DiBlasi on project progress
- Set goals for this week
  - Pipeline setup for CI/CD (deployment)
  - V1
  - TCP work
  - QR code page deployment
  - clean up GitLab
    - Label consistently
    - Remove old folder(s)
- Added Dr. DiBlasi to the Discord under the appropriate role
  - Added to GitLab--can see code without editing
- Discussed removal of CSV from MATLAB and accepting through command line line-by-line instead
  - stdin for input
  - Powershell is better than command prompt for Windows
- Discussed creating fractal trees

- - 4 data sets
    - angle/randomness
    - color
    - length
    - something else
  - data changes 72 times per second--how would we avoid shakiness?
  - https://sciencevsmagic.net/fractal/#0060,0090,1,1,0,0,1
    - has a lot of the implementation in the source code
  - Would the math department on campus have ideas?
  - Dr. DiBlasi - Processing handles fractals
- Discussed painting image generation
  - Two values are coordinates
  - one is color (hue would divide up into RGB)
  - one is radius of 'drop'
- Goal to create other test data files
- CRT work over the weekend - Cosette, Park, and Wei Shen
  - one blew up
  - Plan to try opposite crossing of vertical and horizontal wires
- Discussion of wired vs. wireless TVs for installation
  - wireless could be infinite TVs
  - split coax/other cable is option for wired
- Backend needs to add endpoints for the QR code
  - 1. Get EEG images with two parameters:
    - QR code string with unique identifier
    - song genre
  - 2. Get Art Image with same two parameters as above
- Park has an old laptop if needed
  - Juno can install Linux
- Installation - all tech used should be cohesive
  - 90s theme? Matrix vibes?
  - Science Hall basement previously had old Apple PCs/monitors
    - might be at ISU Surplus now
- Consultants page on website needed - Tomas
- Plan to track song suggestions in Discord and then vote on top ones
- Discussion of how DJ board would be used
  - Cosette working on usage, in contact with software/manufacturers
- Discussion of feature creeping--we can no longer be in the idea phase
  - Implementation of an idea freeze?
- Discussion of integration between analog DJ board and everything else digital
- Stick with V1 for now - plan to discuss with client/advisor in future

- V1 deadline moved to the following Monday
- New tablet acquired and placed in senior design lab locker

Week 11:
- Worked on running MATLAB image generation outside of MATLAB as a standalone function - Shelby
- Worked on integrating MATLAB on the server - Liz and Shelby
  - Troubleshooted and ultimately hit a point where we were restricted by available space
    - Shelby requested additional space, and we received 150 GB from ETG
- Future Monday meetings moved to the senior design lab for a combination of worktime and meeting with Rachel
- Frontend needs access to flags / endpoints for data from the backend team

Individual Contributions

Name	Individual Contributions	Hours this Week	Hours Cumulative
Derrick	• Made progress on frontend logic for calling various endpoints on our web server	5	50
Ayden	• Began progress on team information fragment(s) to be included in our app	6	49
Tomas	• Working on second fragment in front end • Beginning to add consultants page to website	2	47
Elizabeth	• Integrating MATLAB on server	2	49
Shelby	• Requested additional server storage • MATLAB image generation changes to run standalone • Integrating MATLAB on server • Out sick part of the week	6	49
Juno	• Theme for app built out • Modularized tiles for easy	5	48

	repeatability		
Cosette	• Got in contact with company support for DJ board troubleshooting. • Tested vertical orientation - CRT possibly not compatible. (Leaning towards horizontal orientation)	6	50
Nathan	• Security research	2	42

Pending Issues

- Continue work on process book
- Keep track of all contacts reached out to
- Collect all photos (with captions) in a central location
- V1 needs to be completed ASAP
- Information boards need to be purchased and started work on
- Season of sickness and allergies

Plans for the Upcoming Week

- V1
    - Finish MATLAB setup on server
    - Have web apps deployed on server
- Purchase information boards
- Consultants page on senior design website
- Continue work on DJ board set-up and troubleshooting.
- Continue work on design on Installtion
- Begin integration testing

Additional Comments & Discussion

- Scheduling continues to be more difficult this semester due to busy schedules and heavier workloads.