

EE/CprE/SE 4910 WEEKLY REPORT 7

11/4/25 - 11/11/25

Group Number: sdmay26-40

Project Title: True Force Technologies Arcade Rack

Client: True Force Technologies

Advisor: Matt Post

Team Members/Role:

Jacob Garcia - Frontend Development

Dylan Longlett - Frontend Development

Andy Drafahl - Team Manager, Frontend Development

Fadi Masannat - Frontend Development

Sofi Gutierrez - Backend Development

Parnika Dasgupta - Backend Development

Colin Yuska - Electronics

Weekly Summary

This week, the team split up to take on separate tasks. They polished Fadi's revamp of the repo and got the Tailwind working, which was a big step. They also gathered potential animators and decided on their favorite candidate, investigated and documented the structure of the old team's backend, and converted the Figma version of the Arcade play screen into React code.

Past Week Accomplishments

Jacob Garcia

- Looked into Fadi's broken branch and resolved the issues. The Tailwind refactor will now be merged into main.
- Added the final touches to my Bluetooth implementation and merged that into main.
- Read through the original Android app code to get a better understanding of the graph implementation.
- Started to work on touching the Customize Mode display up and adding a graph to display the output data.

Parnika Dasgupta

- Started looking at the Backend code
- Started talking with Sofi on how and what to start implementing this week

Dylan Longlett

- Converted mock-ups to real screens in the app
- Demoed and tested the physical rack
- Worked on getting the full app to run

Fadi Masannat

- Attempted to merge branch with main
- Attempted to debug and fix NativeWind.css
- Refactored the initial 3 screens maintaining consistency, and made it compliant with the new architecture

Sofi Gutierrez

- Looked over the backend code and started to run it to test
- Created a document with a backend structure run-down for the rest of the team to understand
- Started learning PHP (the language that the backend used)

Colin Yuska

- Familiarized with CubeIDE software
- Mapped needed GPIO pins for LEDs
- Began coding LED Timer logic

Andy Drafahl

- Researched potential animators and documented details like pricing, quality, revision count, etc., to give the team comparisons to go off of when choosing the top candidate.

- Read through all of Fadi's "Architecture and Refactor Documentation" to ensure adherence to good React practices.

Pending Issues

CubelDE software (used for our electronics) is robust, but documentation/introduction resources are sparse. The advisor for this project recommended the software, but continued use and development will require more research than the team initially thought.

Individual Contributions

Name	Individual Contributions	Hours This Week	Hours Cumulative
Jacob Garcia	<ul style="list-style-type: none"> - Looked into Fadi's broken branch and resolved the issues. - Merged my Bluetooth branch into main - Read through the original Android app code. - Started to work on touching the Customize Mode display up 	6	42
Parnika Dasgupta	<ul style="list-style-type: none"> - Looked over the backend code 	0.5	24.5
Dylan Longlett	<ul style="list-style-type: none"> - Converted mock-ups to real screens in the app - Demoed and tested the physical rack - Worked on getting the full app to run 	6	32
Sofi Gutierrez	<ul style="list-style-type: none"> - Looked over the backend code - Created a document with a detailed rundown of the code and the structure of the backend - Completed tutorials for backend in PHP 	6	34
Colin Yuska	<ul style="list-style-type: none"> - Familiarized with CubelDE software - Mapped needed GPIO pins for LEDs - Began coding LED Timer logic 	7	31
Fadi Masannat	<ul style="list-style-type: none"> - Researched and gotten good at Native Wind Tailwind styling syntax - Complete Refactoring of the First three screens 	5	37
Andy Drafahl	<ul style="list-style-type: none"> - Researched and documented potential animators. - Read all of Fadi's Architecture and Refactor Documentation. 	1.85	35.6

Plans for the Upcoming Week

Fadi Masannat

- Will get my refactoring code merged and resolve all conflicts of new main implementations
- Will finish refactoring the remaining new screens and other components introduced in the past week
- Will work on more frontend work and screens, and reusable, scalable components.

Jacob Garcia

- Will work on getting Fadi's refactor branch merged to main.
- Will finish adding the graph to the Customize Mode view.

Sofi Gutierrez

- Will start converting the PHP backend into a Java Spring Boot application. I'll analyze the current PHP routes, database connections, and core logic, then rebuild them in a structured Java project with controllers, services, models, and repositories. The goal is to replace existing functionality with a language and system we are familiar with.

Colin Yuska

- Continue researching similar projects that use single-addressable LEDs to gain direction for LED timing.
- Upgrade the circuit for better protection, for example using a capacitor to smooth ADC noise.
- Begin testing basic lighting functions.

Parnika Dasgupta

- Will understand the existing Backend code to a T and then start converting it to Java.
- The main objective would be to change the language of the database and then start building on top of it (in Java)
- Now that we know that we are going to have a local database to store the data, which is going to help us

Andy

- Finish working on the animation component in the repo.
- Pick up other components from Fadi's dock to work on. There are plenty to choose from.

Summary of Weekly Advisor Meeting

During the advisor/client meeting this week, we clarified major details about the project. First, the team got approval from the client to use two different avatars (one male avatar, one female avatar instead of one neutral avatar) and got the client's desired design direction for those avatars. The team also confirmed with the client exactly where the line was being drawn between the Arcade Fack and the other team, who is developing an app for the Force Rack. There were many confusing overlaps, which complicated development, so the team lobbied

for a local implementation of the database with no worldwide leaderboards and ditched the login system altogether because it was unnecessary for the setting in which the Arcade Rack would be used.