EE/CprE/SE 4910 WEEKLY REPORT 8
11/18/25 - 11/25/25

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 continued refactoring the repo, developed components for the app, got a demo version of the arcade mode working, created an animation proposal for the client to review, tested various features, and continued preparing the database. Most members were tackling their own specific challenges, but the team made solid progress as a whole.

Past Week Accomplishments

Jacob Garcia
- Implemented the graph to the Custom Mode view. This way users will be able to see the overall weight they lifted throughout the few seconds they lifted the bar. The graph dynamically changes its size by how much the user lifts. This allows there to be no max to the graph.
- Added custom unit functionality. The purpose of the custom mode is so companies can see what other people can lift of their product as a fun thing to do at conferences and such.
- Did some code cleanup. There were a few files that weren't being used at all, I removed them.
- Tested the app with the physical rack in the lab.

Parnika Dasgupta
- Read Fadi's procedure document all the way to get on the same page as everyone else
- Reviewing Sofi's code (the code she changed to JAVA)
- Finishing the last part of the git tutorial

Dylan Longlett
- Refined the overall arcade layout and visual style, polishing animations, color choices, and UI flow to create a more engaging look and feel.
- Implemented a full leaderboard system for arcade mode, including score tracking, sorting logic, and a clean display for player rankings.
- Integrated background music, button sounds, and action cues in arcade mode to improve feedback and atmosphere.
- Added a bar bending visual effect during lifts, giving the arcade mode a stronger sense of weight and impact.
- Performed thorough testing across all arcade features, checking stability, performance, user input, and edge cases to ensure smooth gameplay.

Fadi Masannat

- Added a full mock version of the new Printout View screen to our React Native app so we can start visualizing the layout and flow before tying it into real data.
- spent time researching different open-source libraries for rendering graphs and charts in React Native
- Identified the best options (react-native-svg + victory-native) that fit both our UI needs and our existing Expo/NativeWind setup.

Sofi Gutiierrez
- Created a new Spring Boot project using Maven
- Added required Spring Boot dependencies
- Added and configured spring boot maven plugin in the POM
- Diagnosed and fixed Maven build failures related to missing plugins

Colin Yuska
- Finished STM code portion of hardware LED addition
- Researched projects with adjacent scope to familiarize with STM syntax
- Devised tests to debug LED strip software and created circuit designs for protection.

Andy Drafahl
- Created team assignments on the kanban board.
- Shifted gears to work on an in-depth animation proposal to be approved by the client and eventually sent off to an animator.
- Created mockups of the avatar suits to show the client.
- Created sample animation frames for the animator to use as a reference.

Pending Issues

The team is currently making a major design decision: should the Arcade mode be completely switched over to Python, while leaving the Custom mode in React? Dylan proposed the idea, and the rest of the team is deciding if it will be the best move.

Individual Contributions

Name	Individual Contributions	Hours This Week	Hours Cumulative
Jacob Garcia	- Added graph to Customize Mode view - Added custom unit functionality - Code cleanup - Tested the app with the physical rack	7	49
Parnika Dasgupta	- Studied Fadi's Procedure document - Reviewing Sofi's code - Last part of the git tutorial	4	28.5
Dylan Longlett	- Worked on arcade development and styles - Added leaderboard to arcade mode - Added music and sound effects to arcade mode - Added bar bending effects to arcade mode	8	40

	- Did extensive testing on arcade mode		
Sofi Gutierrez	- Started to convert backend code from Laravel PHP to Spring Boot Java	6	40
Colin Yuska	- Finished STM code - Researched projects with adjacent scope - Devised tests to debug LED strip software - Created circuit designs for protection.	4	35
Fadi Masannat	- Added a mock Printout View screen - researched graphing libraries for the UI - Validated the best options for integration.	5	41
Andy Drafahl	- Created team assignments. - Wrote animation proposal document - Created mockups of the avatar suits - Made sample animation frames	5.02	40.62

Comments and Extended Discussion

We're switching the app into 2 deliverables. It just didn't make sense anymore to make an arcade "mode" and a custom "mode" instead of making 2 different apps. We're still adjusting to that change, which is why this document still says "mode" in several places.

Plans for the Upcoming Week

Jacob Garcia
- Work on final presentation
- Visual tweaks for Customize Mode

Dylan Longlett
- Continue working on arcade mode
- Create a proposal for the team about whether to switch arcade mode to Python.

Sofi Gutiierrez
- Finishing converting the PHP code files into Java and ensuring API routes are working, with an extra week, I hope to finish the backend, so the frontend can start using it

Parnika Dasgupta
- Coordinate more with Sofi and keep reviewing the code files and making sure it is working with the Frontend
- Make enough progress to be able to demo it to our group right after Thanksgiving Break

Colin Yuska
- Begin and Finish debug testing with the physical system
- Create the "finished" circuit, including new added protection and smoothing
- Work with Matt Post to find out the analog output of the load sensors and change the code to reflect the new parameters

Fadi Masannat
- Get in sync with the team's new approach and any architectural and stack change options
- Make sure my branch is in sync with main if we do decide keep the react native app
- Continue frontend development with another screen

Andy Drafahl
- Finish the animation document and continue bringing revisions to the client.
- Learn how to make retro-style chiptune music for the Arcade mode using a screen tracker (leaning toward Furnace).

Summary of Weekly Advisor Meeting

During the weekly meeting, we clarified details about the deliverables and animation. The client agreed to split the project into two deliverables: the arcade app and the custom app. The client also specified the animation frames that he wanted in the final animation. He helped the team refine the design for the avatars, and the team aims to keep him in the loop as they continue writing the animation proposal document. The team also demoed the arcade app with the Force Rack, which the client was pleased with. The team's advisor proposed potentially putting the software on a Raspberry Pi, but that's a decision that will be made later on.