Project Fitness Overboard
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Avast ye landlubbers, grab your mateys and see if you have what it takes to walk, run, and skip your ship to victory. Fitness Overboard will keep single and multi-person crews engaged in weekly fitness challenges, letting you prevent scurvy while pushing your friends into the briny deep!

As of 2018, 42.4% of adults in the United States were considered obese (Hales et al. 2020). Broken down by age, 40% of those ages 20-39 are considered obese and 44.8% of adults aged 40-59 years old were in this category. Obesity is directly correlated to an increased risk of numerous health concerns including: strokes, high blood pressure, various types of cancer, and severe complications from COVID-19. To address this issue, we are proposing the *Fitness Overboard* system to encourage more households to get active together. Each week, *Fitness Overboard* households will receive a set of weekly challenges. They can choose to compete against one another or opt to join community challenges which rank them against other households they are friends with. This system provides a mechanism of accountability for families and individuals. During the week, they will get motivational messages based on their progress on the goals. At the end of each week, the system will populate individual and household awards. In the community setting, you can use your awards to launch virtual cannonballs at the enemy ship of your choosing.

The target audience for our project are single and multi-person households that want to improve their general health and fitness. We have envisioned three possible household types that this project will apply to: 1) families with young children (ages 5-17) who live in the house 2) young adult households with 2+ members and 3) young adults who live alone. We envision that members of these households will include at least one member that uses a smartwatch or mobile-based device to track their fitness. For the non-family households, we envision young professionals or graduate students who have limited time for fitness activities.

Versions:

Jay's:
        The main display for this system will be a wall-mounted system for the User's kitchen (or another convenient shared space). This could be either a tablet or a Raspberry Pi-powered touchscreen mounted on the wall. The idea is that this will be stationary and visible, so the challenges cannot be easily ignored.

Maggie's:
        In addition to the wall-mounted system, we will build a complementary mobile-based application. The mobile application will display the weekly challenges for the households as well as the individual's progress. It will also provide optional reminders to encourage the individual to meet their weekly goals. This component will also act as the activity input center

for households. Individuals can choose to input their fitness data by syncing with the fitness app of their choice: Strava, Garmin, or Apple Health will all be options.

How this project meets the theme:
For this project, we will be collecting data from the user on their exercise habits. This data will be used to track progress on user challenges, helping them set and accomplish daily / weekly goals for physical activity.

Main Challenges of this project:
1. To effectively gather fitness data, integration with an existing 3rd party fitness tracker, such as Google Fit, Apple Health, or Strava would be highly beneficial and greatly increase the accuracy of our system's tracking.
2. To set reasonable goals, we will first need users to complete some sort of survey or use fitness data to show current fitness levels. Otherwise, should challenges be too hard or too easy, there will be no benefits to physical fitness.
3. To promote challenge completion, we would like for households to be able to compete with each other, under the pirate-themed ship vs ship battles. The process of doing this will be new and there are many challenges to representing this effectively.

Bonus Features:
Pirates! To make engaging with the system more fun, we've decided to make it pirate themed. Pirates are a generally pleasing theme that makes it easy for both adults and children to interact with the system. Households are represented by their "ship" in the system and each individual user gets to pick out their pirate name for the scoring leaderboards. Awards for challenges will include treasure items and the option to sink enemy household's ships.

We've chosen to go with a competitive design that allows users to see how they stack up against household members and their connected households. We hope that this encourages more activity and allows them to engage with others. This feature is especially useful in the context of the COVID-19 pandemic where many individuals felt isolated from others and unmotivated to take care of themselves.

References:
Craig M. Hales, Margaret D. Carroll, Cheryl D. Fryar, and Cynthia L. Ogden. 2020. Prevalence of obesity and severe obesity among adults: United States, 2017-2018. *NCHS data brief*(360):1–8, February.