User Personas and Scenarios

My project is aimed at new able-bodied weightlifters looking to learn form for compound lifts such as bench press, overhead press, deadlift, and squat. The project will be able to identify when proper range of motion is achieved indicating that muscle groups are properly activated. With the help of the project compound lifts are able to be simplified, optimized, and safer for the beginner weightlifter.

Beginner weightlifter user persona

Name: Pranav

Background: Has never weightlifted before, has a rather sedentary lifestyle such as an office job. The primary goal Pranav wants is to get a more aesthetic body using compound lifts as he heard this trains many muscles rather than isolating. He does not want to spend a lot of time at the gym and does not have the resources to get a coach. He has no previous knowledge of form nor the experience however he has seen how the compound lifts are performed through YouTube.

Problems: Since he has no experience, he has no idea how to properly get in form for any compound lift mentioned before. He may not realize when the motion for any of these lifts are fully completed and when he is fully activating his muscles. He may not know if he is properly incorporating voluntary muscle movement for all the muscles he wants worked. Furthermore, he may not remember how many repetitions he has left in his set, and how long he should be taking a break for. Pranav is also scared of injuring himself as his friend has had injuries from not breathing during motion resulting in him passing out with heavy weight on him.

<center>User Scenarios</center>

- Get in proper start form for the compound lift

    o The user has the device on that reads body position and movement

    o The user designates how many repetitions and sets they are going to perform and which exercise at which weights (in further development it can preselect what weights would be best for you based on what you want to train for)

    o The user gets in form and then if they are in proper starting form the user will hear a checkpoint sound indicating they are properly starting the compound lift, otherwise they will hear a buzzer that indicated they are not in proper starting form and are at risk of injury or suboptimal training

- Get full range of motion, breathing properly during set, and count repetitions for that set

    o Assuming the user has proper start form, they will now go into motion and have previously calibrated their full range of motion with low weights

    o When the user reaches their full range of motion a number is repeated to them indicating which repetition they are on within the set, if full range of motion is not reached the user will not hear the number

    o Additionally, the interface can be set up to have a breath in noise when they are supposed to breath in during the movement and a breath out noise for when they are supposed to breath out ensuring users breath properly during motion

    o When the user finishes the last rep, the project tells them that the set is complete and to rest

- Getting proper rest between sets

    o Once the first set is complete a timer will run on the interface that is set by the user, or can adaptively track optimal rest time calibrated for each user (hard to implement)

    o The interface can tell the user what time it is at specific intervals i.e., every 10 seconds, or can be silent and only make noise when time is fully over

Throughout all these user scenarios the application interface is the primary source of control of how the data is used, whereas all of the data collection from the user is from the physical device that reads the body's status. The primary focus of the sonification process is to ensure that the start position before motion is proper, then making sure the movement is optimal according to that person's calibration, making sure the user knows how many repetitions are left, ensuring proper breathing, and finally allowing for a proper break. All of this data should be collected and then used through the interface live and give feedback live.