

# The Applicants' Workout Application

## Team Members



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## Project Abstract

Our mobile application is a technologically advanced replacement for the common gym notebook. Many casual lifters and almost all serious lifters measure their progress in the gym over time. The most common metric to do this is progressive overload, which is a continuous increase in weight moved or repetitions performed. The goal of our tracker is not just to digitize the process of tracking progressive overload, but to make it effortless for the user. The app features an intuitive data entry system, visualization of the data, and an optional hands-free data tracking feature that uses motion capture technology to automatically count the user's repetitions and motivate the user to overload.

## Goals:

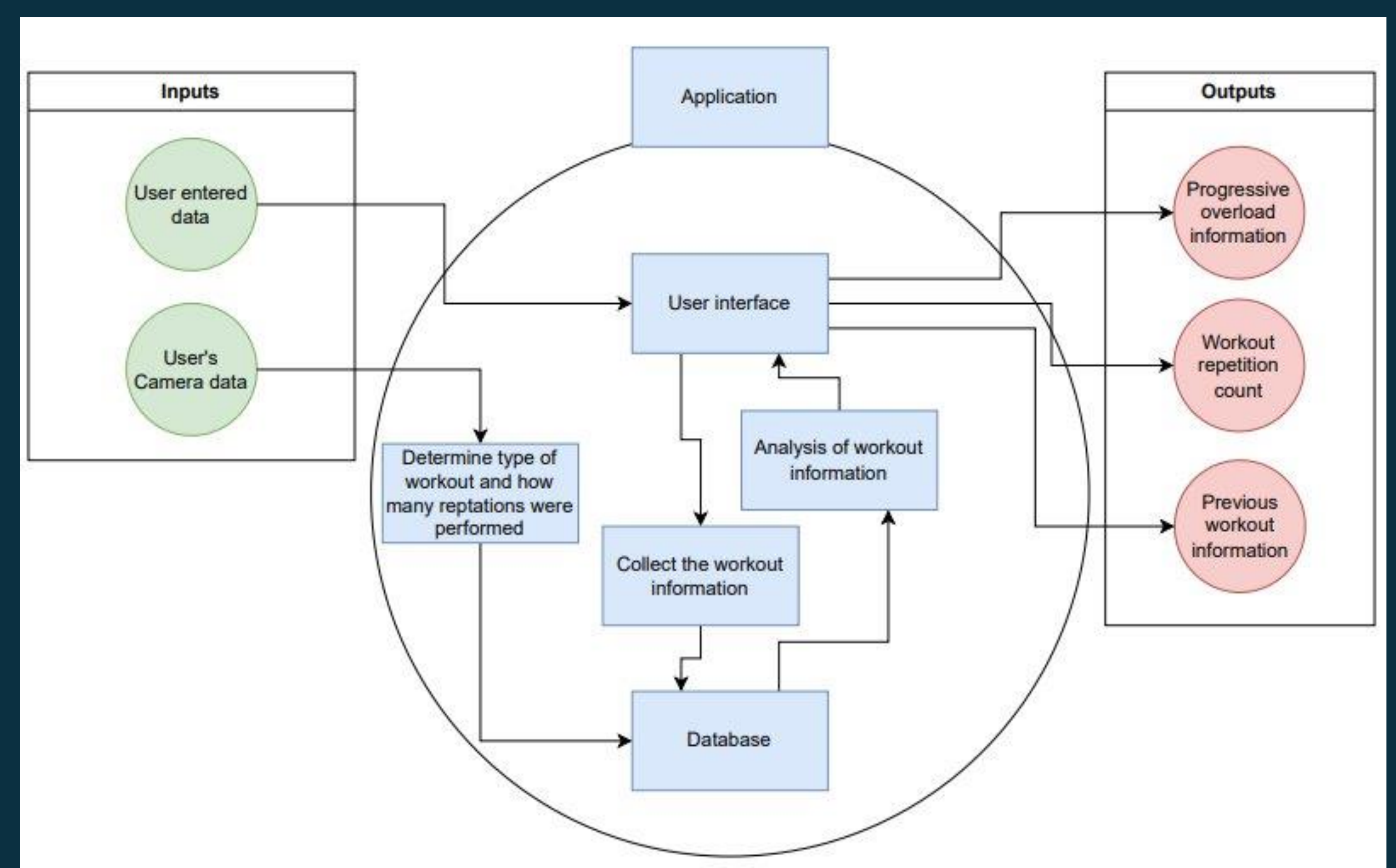
- Our project sought to allow for the quick and easy entry of data. This would allow the user to focus more on their workout rather than trying to track that information.
- While looking at hard data does have its place and is included in our project, we want to allow the user to be able to visualize their workout information to get a better grasp of their progress.
  - Regardless of the system, if it contains data, keeping that data secure should be a high priority. Our project is not an exception.
- With all the tracked information, we would also like to provide the user with personalized suggestions to optimize the possible progression of each user.

## Challenges:

- With the many different ideas that came to mind, it was difficult to hone in on the ideas we truly wanted to pursue and which we were okay with not including due to the scope of the project.
- Due to our project having a great deal of subjective goals, it was difficult to obtain clear requirements to achieve the goals of the project.
  - The project included a vast amount of technology, and it was difficult to seamlessly pull these technologies together to achieve our ideal application.
- Collecting enough data to accurately determine a user's workout repetitions with computer vision.

## Design Overview:

- Workout Tracking Software:
  - The application allows for both manual entry of data and entry through camera tracking (automatic)
  - To achieve automatic tracking of specific workouts through a camera, a computer vision library was used to determine what workout the user was performing and how many repetitions were performed.
- Progressive Overload Prediction:
  - The algorithm that is being used to make these predictions is logistic regression to provide consistent, yet personalized results based on user data.



Project Design Diagram