The current market for health-monitoring solutions of pets, more specifically dogs, has been proven to be costly and time-consuming. In situations where the dog's health needs to be observed (e.g., during physical activity, after medical treatment, etc.), having the ability to do so would be beneficial to the owner. This need presents the opportunity for SafePaws vest. SafePaws is a health monitoring vest that focuses on monitoring pulse rate and temperature of the pet. The objectives of SafePaws are to give the owner access to convenient and continuous monitoring, alerting them promptly if any health issues arise while their pet is wearing the vest.
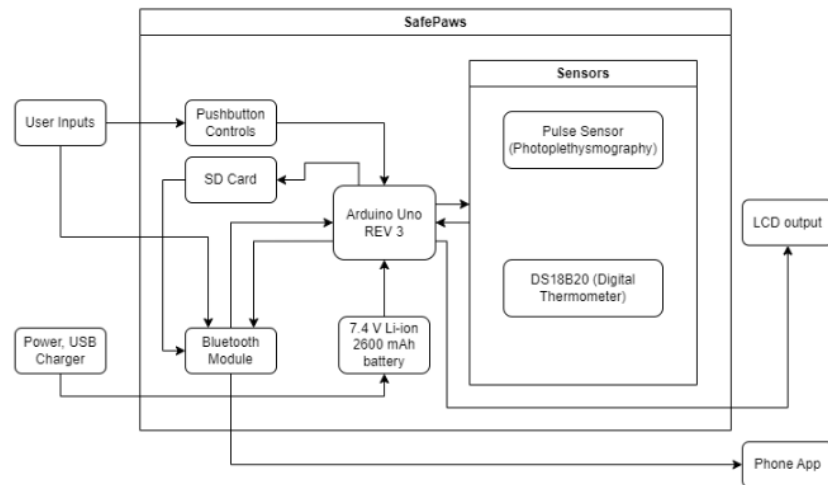
The SafePaws design was met by several constraints to ensure both user and pet-friendliness, as well as accurate data collection. The vest is engineered to withstand the typical dog environments and daily activities, including exposure to weather conditions, outdoor adventures, and potential rough handling. Pet safety is vital, requiring specific features and materials to ensure the well-being of our four-legged companions. The constraint of battery life is important since the design allows for owners to rely on the device for extended monitoring without frequent recharging. The integration of temperature and pulse sensors introduces complexity, requiring precision and reliability in data collection. Navigating around the size and weight limitations for the vest, the team ensures the vest remains comfortable for dogs.

Waterproof and dog-compatible sensors, an Arduino microcontroller, an SD card for data storage, and a Bluetooth communication module were selected to make up the hardware components. These components will be integrated into a dog vest, allowing protection from the outside elements. The sensor data is gathered by the microcontroller and transmitted wirelessly to a remote application for convenient monitoring and system control. The remote application being an app that the user can access through their own mobile smart phone.

SafePaws is only in its development stage with lots more to complete. As the team continues to improve the design, additions to sensor modules and renditions for different size dogs are in mind. But what makes it exciting is that SafePaws is different. Our project aims to make health-monitoring more accessible and user-friendly to so much more. It is not merely about supervising a pet's health and well-being; it is about laying the groundwork for more health-monitoring solutions to be more accessible and user-friendly.