Building a Platform for Wearable Device Health Data

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Background

Wearable devices can provide tremendous benefits to **long-term population healthcare.** However, pulling data down from third-party platforms is costly and may not have the data types necessary for research.

GOAL: Develop a platform to collect and analyze user health data from commercial wearable devices

Engineering Goals

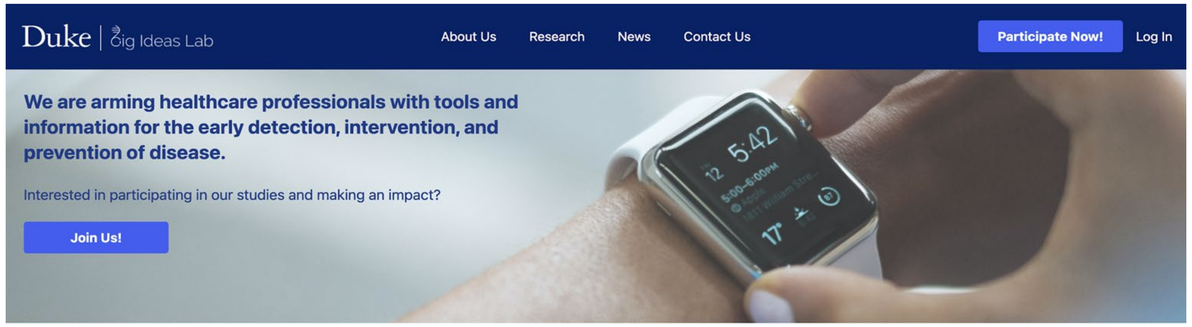
"Health data is messy and decentralized"

- APIs allow for **scalable** and **efficient** access to data using **endpoints**
- Use **Garmin** and **Fitbit API** endpoints to collectively store user health data in our centralized platform
- Host data in a **SQL Database**

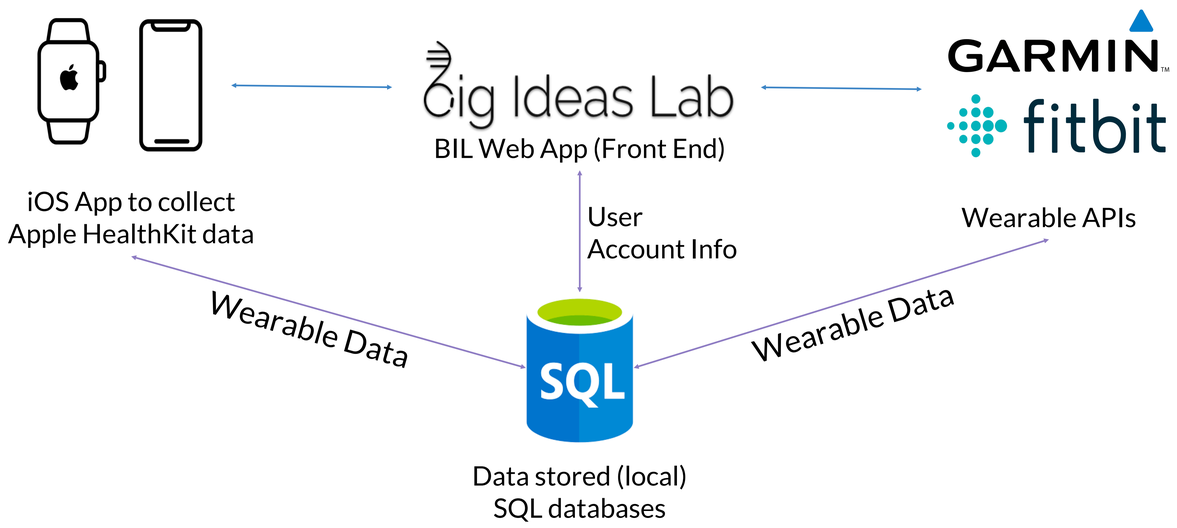
Website Layout & Design

Allow users to:

- Learn about research studies conducted by BIG IDEAs Lab
- Create an account to share wearable device data

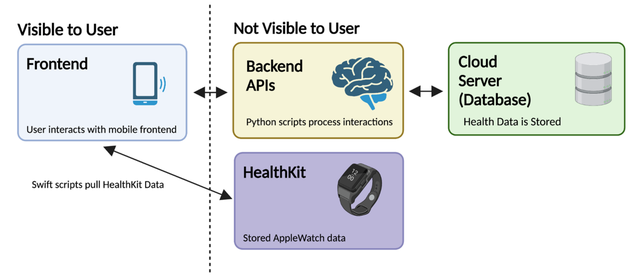


Integration



Mobile Application

- Developed an iOS pipeline to collect Apple Watch HealthKit data



High Level Structure for Mobile Application

Application allows users to:

- Perform authentication
- Approve collection of health data for research
- Send their HealthKit data to a cloud database for analysis

Future Work

- Improve UI for mobile and web front end
- Finalize API endpoints
- Deploy web app on a remote server
- Test scalability and ease-of-use

Acknowledgements

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