GARI CLIFFORD

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Required Skills:

(List skills needed) – Python, Native iOS, Jupyter, Postgres, Other NoSQL, AWS - flat files

Preferred Team Communications:

Google Hangouts, Any video conferencing software with high bandwidth

Data Sources:

N/A

Other Items:

Project has time zone flexibility. Mentors and students will determine a good time for virtual meeting

Team Info:

Needs a Developer, Tester, Project Manager. Allows one team of 4-6 members.

OPEN SOURCE FHIR APP FOR IMPROVING HEALTH AND DATA LITERACY

Combining the data a smartphone can passively collect with basic data on hospital visits, medications and diagnoses can provide a detailed spatio-temporal profile of factors that lead to clinical changes. A smartphone mediated system for assessing health also improves the likelihood of and access for disparity populations (those with socioeconomic, cultural, educational or geographical barriers to healthcare). This project aims to connect meaningful data recorded by smartphones with electronic medical record data to provide a full picture of an individual's health behaviors, end-points and exposures. Moreover, by constructing a secure web-based interface, it will empower individuals to visualize and manipulate their own data, thereby enhancing health literacy and data science literacy at the same time..

PROJECT OBJECTIVES

1. Develop an BSD licensed iOS app to connect to poll Epic on a regular basis to record key clinical issues (visits time/reasons, medications, diagnoses, etc).

2. Push data to a HIPAA-compliant AWS storage instance. (Project will provide the configuration for HIPAA compliance, so no speciality knowledge needed on HIPAA compliance)

3. Merge data with other data already being generated by the app (accelerometer and location)

4. Provide a sever-side data analytics visualization and manipulation of the data using Jupyter notebooks connected to AWS with an example (e.g. regress activity on self-reported happiness)

5. Poll public servers to add public information such as pollution levels, weather and other factors related to health. (This is optional if time allows.)

6. Deliver demo and source code in Github

SUCCESSFUL PROJECT

To Be Discussed

Intellectual Property: Yes - this project is conducted in collaboration with Morehouse School of Medicine and the project is designed to be BSD-licensed. This means the teams are free to commercialize it afterwards, but may not file IP on the design or application of the system. This is a community-owned project designed to empower disparity populations, and allowing a small group of people to exclusively benefit from it would be unethical and contrary to the project's goals. This project is about empowering the individual to take control of their data, develop health literacy and potentially data science literacy.