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Sprint 0

Trello Board

1) Trello board URL:
   a) https://trello.com/b/mRbyWaer/project-board
2) User stories
   a) Stakeholders presented data and emphasized importance of a product that they can pitch to investors for funding
   b) Stakeholders are from a startup looking for venture capitalists to invest in their company
   c) Explore which database to use for our project
   d) Identify the data pattern, and which attributes to use
   e) Explore how to use the Google Map API
      i) Features may include:
         (1) See all the activities on a particular day
         (2) See all days I completed some activity
         (3) Show a calendar with a check mark indicating a particular activity was completed

Initial design

Group 6 is thinking of developing either a Web Application or a Mobile Application with presented data. The below outlines both scenarios.

3) Inputs
   a) Raw JSON file
      i) set data up to do interesting things and make sure it is engineered instead of just being built
      ii) get data setup so it is malleable
4) Outputs
   a) Custom Java class sorted by date containing JSON file's data attributes
      i) must support the decided-upon functionalities of our end product; we want to make it adaptable for future tasks as well
   b) Data visualization
      i) Geographic heat map based on time durations / dates
      ii) Health dashboard
   c) Useful information to user

      i)   Use data in a way that informs user about their tracked activities

            (1) Answer questions like:

                 (a) What day of the week do I do the most physical activity?

                 (b) How much do I run/walk/bike versus drive?

5) Major abstractions

    a) Data type (below is our design of the java classes using OOD principles to utilize our data efficiently, we still need to create interfaces and propose methods)

        i)   ClassDate

            (1) LocalDateTime lastUpdate

            (2) ClassSummary

                 (a) List<Activity>

                 (b) Activity

                     (i)   String activityName

                     (ii)   Integer duration

                     (iii)   Integer distance

                     (iv)   Integer steps

                     (v)   Integer calories

            (3) ClassSegments

                 (a) String place

                 (b) LocalDateTime startTime

                 (c) LocalDateTime endTime

                 (d) ClassPlace or ClassMove (*ClassMove will have different attributes below, not noted here*)

                     (i)   Int ID

                     (ii)   String name

                     (iii)   String type

                     (iv)   ClassLocation

                         1. Float latitude

                         2. Float longitude

                     (v)   LocalDateTime lastUpdate

        ii)   Data Structure

            (1) Create a java class with top level Date that contains the attributes of all data. Can be stored into an ArrayList which will represent the database we are using for use in Java code.

            (2) Android.database.sqlite package contains classes to manage database within mobile app

        iii)   User Interface

            (1) Stakeholders asked for code to be strong at first and not too much focus on looks. More on UI later.

6) Relationships identified
  a) There is a correlation between calories and different physical activities; walking, running and cycling
  b) Each "day/date" is the highest data point in the hierarchy of contained data
  c) Segments alternate between "place" and "move" (you need to "move" from "place" to "place")
      i) Place has geographic location
      ii) Move has calories and activity information
          (1) Will add up to values in the Summary
7) Programming language
  a) Java
      i) Back End of the Web Application
  b) JavaScript (Front End of the Web Application)
  c) HTML (Front End of the Web Application)
  d) Android Studio for Mobile App Development
      i) XML
  e) SQL
8) External libraries identified
  a) React
  b) Google Map API
  c) SQlite; doesn't scale up very well - will need to get further information from stakeholders about whether the data will scale up or out.
  d) MySQL
  e) Java Servlet

GitHub:

https://github.ccs.neu.edu/nagaichsid/CS5500_Project