CS5500 Project Group 7
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Trello Link:
https://trello.com/invite/b/1sYhpNkE/19be7cb650a4ad2897d7493108aae7d2/agile-sprint-board

Tool Chain and Development Environment:
- **MySQL**
    - Based on the input file, storyline.json, our group has decided that the best way to effectively store and organize specific pieces of information from that file is to use a relational database. Our decision is based on the fact that the json file contains entities that are highly interrelated, which makes it possible for us to create a predefined schema. We have thought about using a document database, like MongoDB, but we have come to the conclusion that data from our input file can be highly structured and that data redundancy can be greatly reduced with the use of a relational database.
- **JDBC**
    - This is an external library/API we are planning to use to connect our mysql database to the java environment and use it further to connect the mysql server and query it directly from java.
- **Java (Eclipse)**
    - We believe that Java is the most appropriate language to use in this project since we want to adhere to proper design and implementation principles. Object oriented programming languages, like Java, will allow us to achieve object oriented design principles such as abstraction, encapsulation, hierarchy and modularity. Such principles will be difficult to achieve using languages such as Python and C. Therefore, we have decided to use Java to ensure that our code will end up being highly reusable and maintainable in the future.
- **Trello**
    - Using Trello will help our group keep track of the different features that need to be developed throughout each sprint. Furthermore, it is a great tool for monitoring progress as well as a way for us to distribute tasks among group members without creating any confusion (i.e. who's testing, who's coding, etc.). We hope to use Trello as a tool for avoiding work duplication and as a way for group members to be aware of each other's progress.
- **GitHub**
    - To achieve successful version control, our group has decided that using GitHub will be the best option for this project. GitHub will allow us to share our code to different members in the team as well as allowing us to keep track of changes made in our code throughout the course of our project.

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User Stories:
Epic #1: As a user I want to look back at my activity levels.
- Story #1: As a user I want to know the number of steps I took on a particular day.
- Story #2: As a user I want to know the amount of the distance that I have travelled when doing a physical activity (walking or cycling) on particular day
- Story #3: As a user I want to know the amount of calories I have expended in any given time frame (days, weeks, months, years).
- Story #4: As a user I want to know the amount of time I have spent doing a physical activity on a particular day or for a particular activity
- Story #5: As a user I want to know how frequently I am physically active in any given time frame (days, weeks, months, years) based on a qualifying criteria

Epic #2: As a user I want to understand how I manage my time
- Story #1: As a user I want to see down of I spent my time on a particular day to improve my time management
- Story #2: As a user I want to see my breakdown of a time in a pie chart to see visually how my day was spent
- Story #3: As a user I want to see the amount of time I have spent in the car (transport) in a given timeframe (weeks/ months/ years) to understand how much time I waste travelling

Initial Design

Input Specification
In terms of the input specification, we plan on using the information from the storyline.json file. For flexibility purposes, we plan on incorporating most of the information from the file into our database but below are some of the specific inputs that we are most likely going to use:
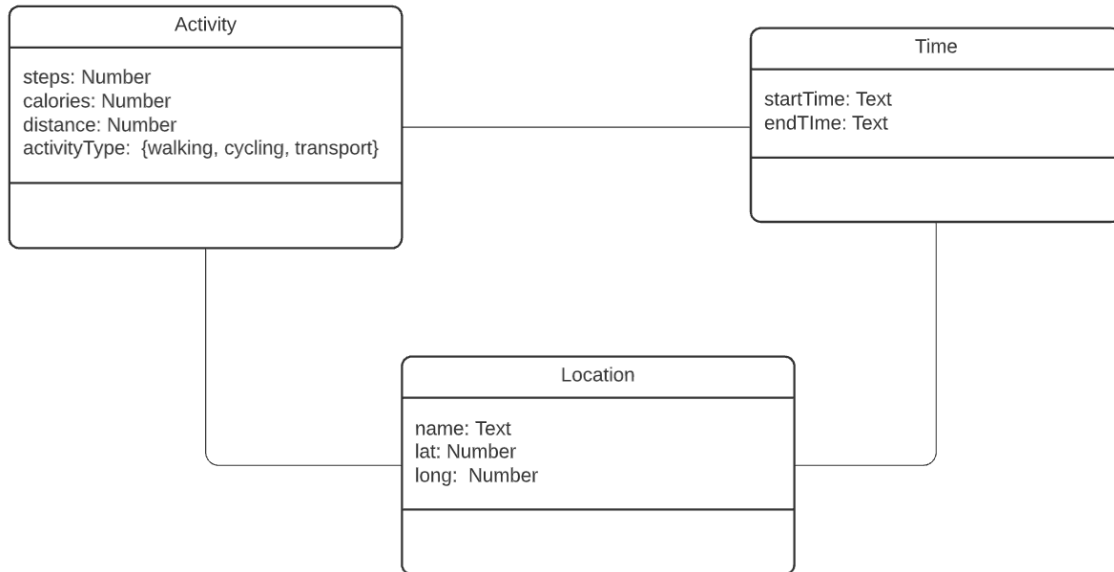- type
- activity
- startTime
- endTime
- duration
- distance
- steps
- calories
- locations

Output Specification
For the output, we are imagining a webapp where the user has the ability to drill down through their data and understand two aspects really well - their activity levels and their time spending. These two data points would be accessible to the user by having filters of particular dates, months and years. They would then get to see their data visually and help them understand it better using visual cues.

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Major Abstraction

The following UML diagram represents how we plan to structure our database:

Activity
steps: Number calories: Number distance: Number activityType: {walking, cycling, transport}

Time
startTime: Text endTIme: Text

Location
name: Text lat: Number long: Number

The above diagram only illustrates some of the essential components that we want to have for our database. The diagram is simply a rough outline and does not fully represent how we want the system to be. Interviews will need to be conducted in order to specify the multiplicities between classes as well as the operations that the users may desire. Furthermore, additional classes might be added and classes may even be removed from the system based on what the users may deem to be necessary.

Open Questions:

1. What does the "type" data signify in the json file? How is it different from the activity data?
2. What does the "group" data signify in the json file?