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Final Project Proposal
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City Cycle:

An Interactive Map of Bike Usage in NYC

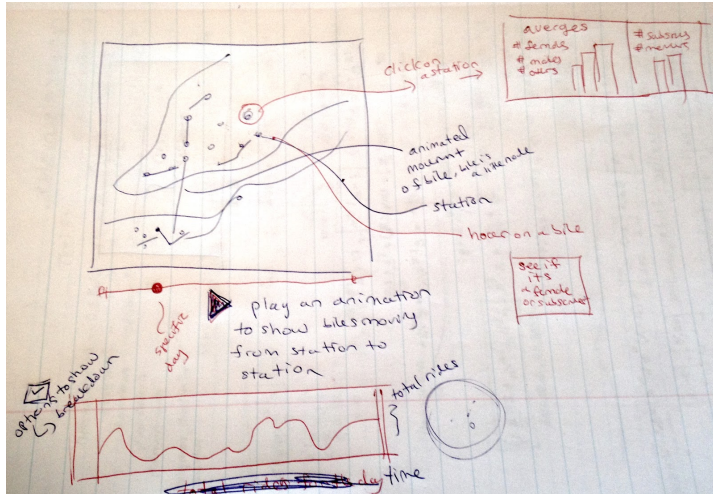
Background and Motivation: As avid bikers and eco-friendly individuals, the three of us are very interested in and enthusiastic about the recent spread of bike share programs. These bike programs have exploded in popularity recently in the cities we grew up in: Philadelphia and New York. Having experienced this boom, we've witnessed the cultural impacts of increased biking including a rise in environmental consciousness, biker safety, and biker communities. CitiBike New York City is one of the most popular and well document bike shares in the country, so we chose to focus on that dataset. Our data visualization will document the spread of CitiBike in NYC in the years 2013 and 2014. This visualization will help users understand where in the city CitiBike is growing in popularity, as well as the changing demographic using CitiBike, including comparisons of gender, age, and distance travelled, and how these have changed over time.

Project Objectives: How has the New York city bike share program expanded over the last couple years: What groups of people are using it has it increased in popularity with (by gender and age)? Where in the city are bikes frequently used? When is bike travel most common (time of day, time of year)? More broadly, we want to address the issue of how bike travel has grown in popularity by focusing on what groups use bikes most frequently and which have begun biking more over the last couple years.

Data: We are looking at data collected by Citi Bike (NYC) from July 2013 to December 2014. The dataset includes the trip duration, start and stop time, start and end station with their longitude and latitude, whether the biker is a subscribed user, birth year, and gender. This is the link to the data: <https://www.citibikenyc.com/system-data> . We will also find the data regarding the weather for each day and whether that day is a holiday.

Data Processing: We don't expect to do substantial data clean up. The data is nicely formatted as a .csv and we can derive the necessary data from the original file. We're going to aggregate data for overall time and station. We will derive age from the birth year.

Visualization:



Must-Have Features:

- A map of the New York city, with stations on it.
- The ability to change time (via a sliding scale) and see the routes on the aforementioned graph at that specific moment. Similarly, one can play an animation over the entire time. Display the weather for that day and if its a holiday. Display top 5 most used stations for that day.
- Upon click of a particular moment in time (on the sliding scale), display information about bike travel on that day, including female, male, unknown gender bikers on that day, average age of rider, and total number of riders.
- A line graph below the visualization of the bike routes tracking total bike riders per day.
- Add well known New York City locations to map to familiarize viewers with map.

Optional Features:

- On hover over a particular rider, display information about rider including gender, age, etc.
- Breaking down the above information per station. Demonstrating which stations are most traveled to.

Project schedule

April 8th - Figure out how to render a usable map of NYC (mainly Manhattan and Brooklyn)

April 17 - Project Milestone 1 is due: By this milestone, we want to have the animation/timeline feature done.

May 1st - Finish visualization features

May 5th - Project is due: Finalize the website, progress book, and the screencast.