Assignment 3 Bonus

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1. Take the first results as a new list of cars’ information, then implement search/filter again. For example, when search list for cars made in year 2019 and available at Boston, we can use a search method to create a temporary car list that all made in 2019, then from this specific temporary list, apply search by available city method to get the result list.

2.

We can use X-Y coordinates to represent position of the ride, and more specifically, X is longitude and Y is latitude. Besides, we need an estimated time of each drive, which includes start time, duration time and end time.

When locates current position, we can create a simple model of traveling by assuming the car goes straightforward from a to b. By using two pairs of coordinates and the times, we estimate the current location.

For instance, a is (100,100) and b is (300,300), the start of the ride is 1:00 p.m. and the estimated arrival time is 3:00 p.m.. Hence we can calculate the duration of the ride is about 2 hours. If the time is 2:30 p.m. now, the ride goes one and a half hours, and the estimated current location is ( 100+1.5/2 \* (300-100), 100+1.5/2 \* (300-100)), which is (250, 250).