Problem

What is the problem you want to solve?
Driving in Seattle can be a frustrating experience, with daily congestion typical of a large city. But, arriving at one's destination to find no parking only makes this experience worse. Knowing the expected parking availability at one's destination as well how far away from the destination one should expect to park will improve the user's experience.

Client

Who is your client and why do they care about this problem? In other words, what will your client do or decide based on your analysis that they wouldn't have done otherwise?
The client for this project will be the City of Seattle and PayByPhone (the mobile application for mobile parking payments). The city of Seattle, working with PayByPhone, recently made available up to the minute parking availability on the app, and could easily be updated to show predicted availability in the future.
The city can then use the data to encourage drivers to choose a parking spot a number of blocks away from their destination. This would reduce congestion as well as pollution, as drivers would no longer be circling the block looking for an available parking spot. The model can also be used to adjust parking rates to match demand in the future.

Data

What data are you using? How will you acquire the data?
I will use the dataset provided by the city of Seattle of paid parking occupancy (available here). The data contains a record every time a person pays for a parking space, using either the mobile app or a physical pay station, as well as the number of available parking spaces on the block at the moment of purchase. From this, I can reconstruct how many available parking spaces there are on a given block at each specific time.
I will also include historical weather data, as weather affects the likelihood that someone will drive versus using a different method of transportation.

Approach

Briefly outline how you'll solve this problem. Your approach may change later, but this is a good first step to get you thinking about a method and solution.
First, I will wrangle the data such that I have parking occupancy data for 15 minute blocks for each block face. I will then perform exploratory data analysis to understand correlations of occupancy rate with variables such as location, time, month, day of the week, weather, etc. Next, I will build regression models using different methods to see which perform the best.

Deliverables

What are your deliverables? Typically, this includes code, a paper, or a slide deck.
I will build a tool that allows one to plug one's destination and estimated time of arrival to see how close they should expect to park at their destination.