

A photograph of a parking lot with several orange bollards and a white car parked in the background. The scene is brightly lit, suggesting a sunny day. The bollards are orange with white reflective bands. The car is a white sedan. The background is a grey wall.

# Where to Park

## Final Presentation

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# Background



Parking in Seattle can be hectic especially when you are unfamiliar with the neighborhood.

Where to Park is a web-based application developed to assist users in locating all available parking spaces near their intended destination.

With this application, users can easily input their desired location, and the program will generate a parking location map, making it easier for drivers to find a suitable spot to park their vehicle.

# Datasets

## Dataset #1: [Blockface.geojson](#)

- Consists of 47000+ rows of data
- Contains geographic information for all public parking in Seattle

## Dataset #2: [Occupancy data](#)

- Includes occupancy in each parking location from the last 48 hours
- Occupancy data cannot accurately represent the availability of a parking space due to the possibility of unpaid vehicles

## Dataset #3: Google Map API

- Provides access to a wide range of data related to geographical locations
- Provides functionality for geocoding (converting addresses into geographic coordinates)

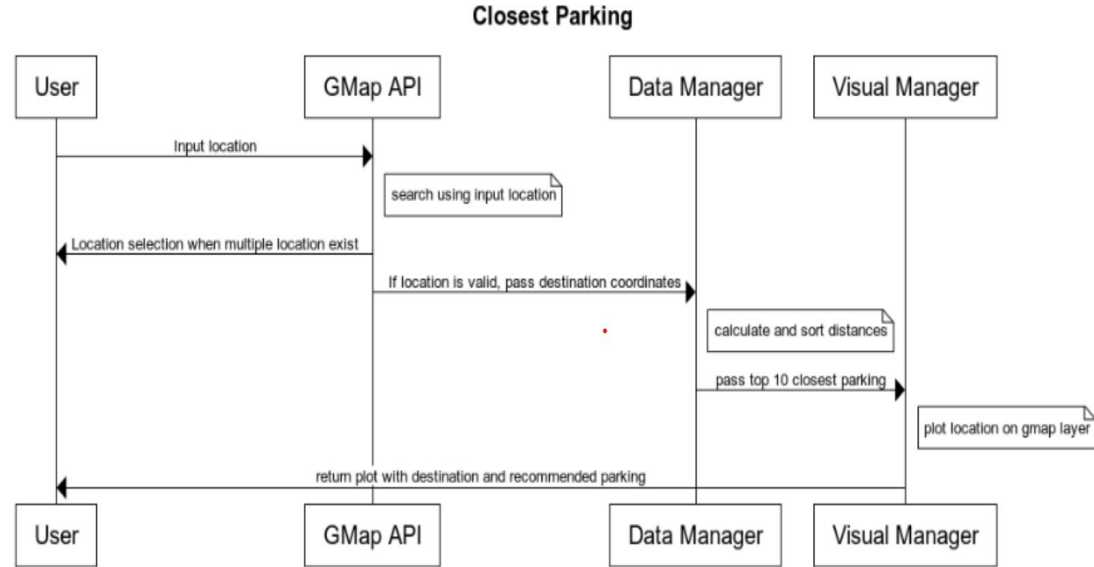
# Use Cases

- User 1 is driving to Seattle Uptown for dinner. She is unfamiliar with the area and would like to know where she should park for 2 hours during dinner time. User 1 knows the name of the restaurant to input in the tool and expects to receive the address of the closest parking area to her destination.
- User 2 is going to an area she is familiar with, and knows that finding parking will be difficult. She would like to know which parking area will have most parking spaces so she has a better chance of finding a spot. She also like to know more information about the parking area like the parking category.

# Design Process

## Components:

- Google API: Takes User input and output geometry coordinates
- Data Manager: store all parking information, calculate and sort distance from destination to all parking locations
- Visualization Manger: display Google Map as base layer, with parking information plotted on top

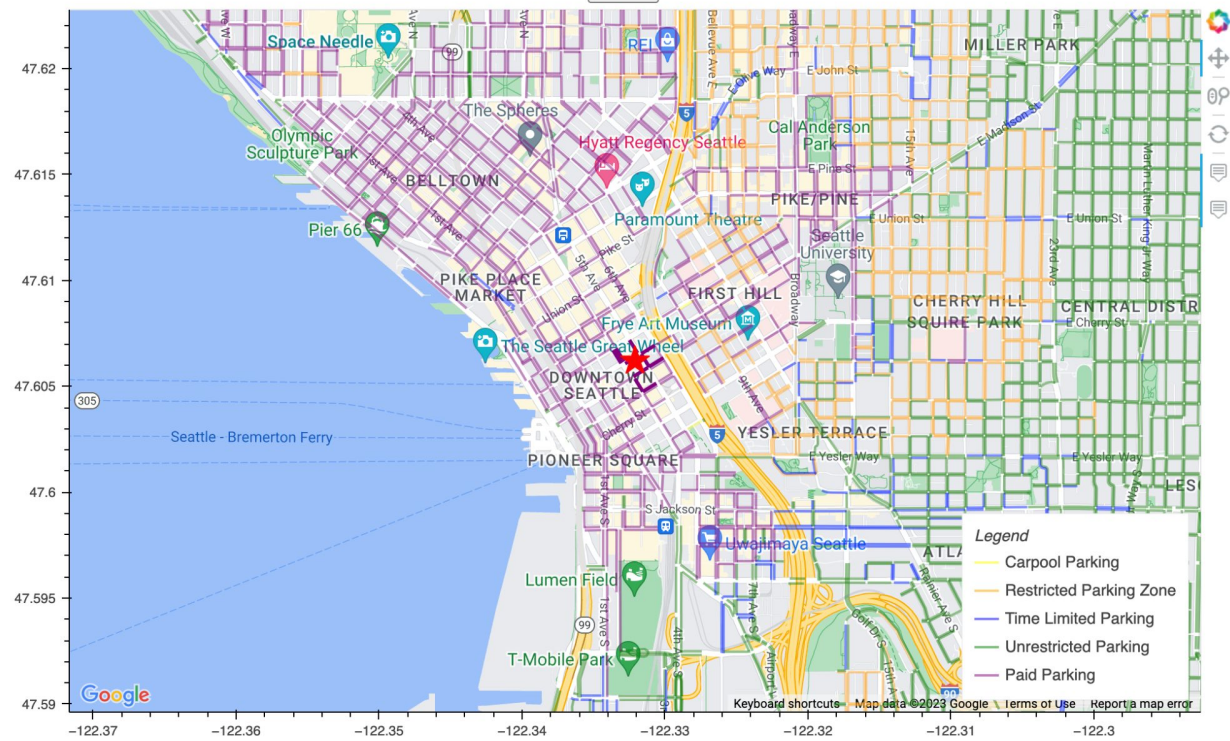


# Demo

## Welcome to use Wheretopark!

Search for your destination:

Search





# Future Work and Lessons Learned

- When we tried to dynamically obtain large datasets, we would easily run into a runtime error. For the future, we would like to look into the connection between the database and the automated process of extracting and parsing of large datasets to actively provide our tool with required data.
- Once the automation is built, more calculations could be practiced and more information could be shown via the hover tool.
- We noticed that, despite the number of rows we tried to present via the Google map API, Bokeh would consistently lag when we attempted to shift from one area to another. Therefore, although Bokeh provides us with a powerful API, it might be more reasonable for us to replace the framework in the future.