

Detailed team 2 project proposal

TL;DR

ParKrowd will give users an easy way to find parking in NYC.

Project Summary

Project Name	Short Description	Team Enthusiasm Rank *1-10	Team Confidence - YES we can do this in time! *1-10	Product Owner. *Who will own this for the team?
ParKrowd	Crowd-sourced website that conveys real-time parking availability across NYC.	7.2	6.6	Andrew "Gio" Giordano

Projects Details:

Name

What is the name of the project you want to develop?

ParKrowd

Description

What is the project you want to develop? (Description in less than **250 words**)

ParKrowd is a website where users can submit when and where they park on the NYC streets as well as the number of open spots nearby, and when they leave their spot. This data is used to give an accurate depiction of the real-time parking available in any given neighborhood.

ParKrowd will interface with parking lot owners to allow for reserved parking at a lot, similar to existing parking applications. In addition, we will provide a system for private parking spot owners to rent out their space: imagine AirBnB, but for parking spots.

What is/are the problem/s you want to solve?

When planning travel in the city, one does not know whether there is parking availability nearby ahead of time, and it is hard to find a parking space on demand near any given location.

User Personas and Major Features

Who are the users you are targeting?

- Identify a few user personas . Hint: There is usually more than one “type” of users.
- NYC Drivers
 - Parents, tourists, groups of friends, or solo drivers. Everyone needs to find a spot and ParKrowd is here to help.
- Parking Lot Owners
 - Interface with their systems to allow users to reserve a parking space in their lot ahead of time. Separate Interface for Parking Lot Owners gained through verification process.
- Businesses
 - Communicate with businesses to monitor the parking near them. Have available spots would be an incentive for customers, but we would implement a review system on their reported openings to ensure accurate reporting. At first, business will register and after verification, they will gain a symbol showing that they are a verified business reporter.
- Private Parking Owners (Driveway)
 - People can rent out their driveway or other private parking spot while they are not using it. Users can leave reviews of these spots. These users are also considered drivers.

Who are the major features you are targeting?

- Identify major functionality
- User Parking Form Submission
- Presenting Mapping Data to the user
- Updating a database of parking availability as well as price
- Usable on Mobile
- Communication with parking lots and reservation platform
 - This has been done by other products below, so there is already infrastructure
- Business Parking Monitoring
- Allow users to rent out private parking
 - User reviews of these spaces

MVP(Minimum Viable Product)

Which features are a must to have? (If you don't have these you do not have a project, not really)

Non-registered users can view a map of occupied spots in the NYC area, and can filter by categories such as private or metered parking. They may register for a new account to contribute to the pool / data of occupied spots including relevant information on them.

Registered users can occupy / leave a spot. They can also write comments concerning potential obstructions (i.e. construction) in the immediate vicinity of said spot. Registered users may also view each other's profiles, except for Admins.

Owners of parking space(s) can submit a verification form to register for an owner's account. After approval, they can list their location, contact information, cost, revenue, and manage the occupancy status of the parking space(s).

For Driveway owners, this will be a simple flag (occupied or not) changed manually.

For Business owners, adding / removing parked spots within the vicinity of their business location.

For Parking Lot owners, a table view with parking lot number, floor (if applicable), and occupancy status will be displayed. Parking Lots with no designated spots can simply report overall occupancy level (ex: near empty, 50% full, full).

Admins of the site / app can manage ALL non-admin users. This includes flagging users for inappropriate / inaccurate content, or deleting their accounts. Admins will approve the verification forms submitted by owners.

Vasu Rabaib

MLP (Minimum Loveable Product)

Which features are a really nice to have to the users would fall in love with the product

Jun Kui Chen

In addition to the features mentioned in the MVP section, following are some features that are really nice to have.

Sending notifications for parking spot vacancies is a nice-to-have feature. The product should allow registered users to put a watch on a list of parking spots. Once a spot is available, the user will receive a notification and can reserve it.

When showing the available street parking spots, users can also see the alternate side parking and street cleaning schedules. Our system will send users notices to remind them of the upcoming time for the alternate side parking and street cleaning. Our application should also connect with NYC311 to get the latest alternate side parking suspension schedule.

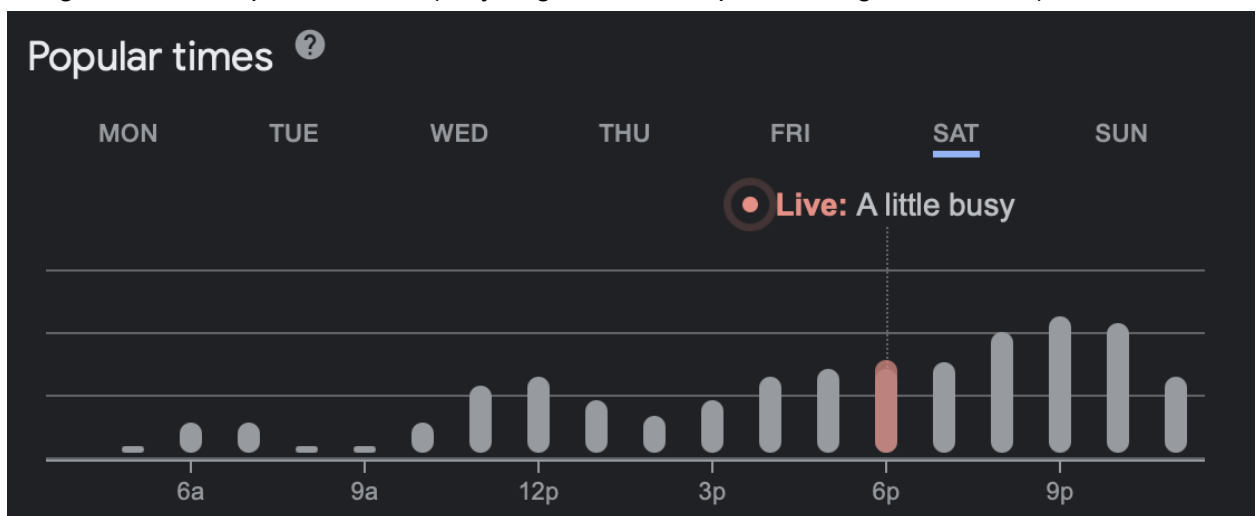
Allow driveway owners to list the availability schedule of the driveway. A registered user can book the driveway through our system. And once the booking is confirmed, the driveway availability should reflect the latest changes.

Nice-To-Haves Features

Not MVP, not MLP but still would be cool to develop these features

Tony Maricic

- Utilize street cameras to detect whether a given parking spot is open or taken
- Utilize real-time tracking to get user's location in real time
- Let users put in their itinerary of locations for the day and find the most convenient spot for them
- Similar to Google's "popular times" feature, use the information in our database to outline the most popular times a given spot is used. Alternatively, how easy it is to find parking in a given area at specified times (maybe go based on zip code for general areas)



- Create a driving network of friends/family you are traveling with. Can share with your network when and where you've found a spot as well as search for multiple spots based on the number of people in your network
- ~Event/Concert parking/idle zones. For concerts and events where parking and/or picking up friends/family is a mess. Collaborate with the event host to get real time updates from them for parking as well as indicate pick up zones where you can idle for a given amount of time for quick and easy pick up. (Probably falls under the business owner user category. However, I think this would be great)

CRUD Features

Nigel Lu

How this project interacts with different user personas

Admin

- C - Create
 - Put a ban on some misbehaving users
- R - Read
 - See a table view of all types of users (includes user info, especially their contact info)
 - View the activities of a specific user via clicking a button on the table view
 - Same as what the Drivers role can see
- U - Update
 - Grant the verification requests made by business owners
 - Grant the verification requests made by parking lot owners
 - Grant the verification requests made by private parking spot owners
 - Hide inappropriate/inaccurate content post by users (the content will not be deleted but rather marked hidden, therefore removing it from the information flow user sees)
 - Make hidden content visible again
 - Withdraw a ban on previously banned users
- D - Delete
 - Remove a user permanently, deleting all data associated (driver, street business owner, etc.)

Drivers

- C - Create
 - Register a new account
 - Submit new parking data, which will be presented as a new post under a certain parking lot / un-official parking space
 - Create and mark un-official parking spaces
 - Rate a parking lot that he/she went to (verified by parking lot owner scanning his/her QR code)
 - Put a watch on a specific parking lot
- R - Read
 - See a map view of all parking spaces and their availabilities
 - See posts and details associated with a specific parking space by clicking on marks on the map
 - View the public profiles of different types of users (except for the Admin)

- View NYC311 Alternate Side Parking updates
- View all his/her watches on different parking lots
- His/her unique QR code (for other types of user to scan and offer them discounts)
 - Note: this helps us track
 - whether he/she actually goes to a parking lot
 - how ParKrowd is helping other types of users (like business/parking lot owners)
- U - Update
 - Edit a new parking data post he/she submitted
 - Edit his/her user profile ("about me", "avatar", etc.)
 - Edit his/her watches on different parking lots
- D - Delete
 - Delete a parking data post he/she submitted (whether this should be deletion or just made invisible by the system is TBD)
 - Delist the parking spots he/she reported
 - Remove the watch on parking lots
 - Delete account

Street Business Owner

- C - Create
 - Register a new account
 - Submit a new verification request
 - Submit new parking data NEAR his/her business, presented as a new post under a certain parking space
 - Create and mark un-official parking spaces NEAR his/her business
- R - Read
 - Same as what the Drivers role can see
 - A dashboard showing
 - how ParKrowd is helping him/her get more customers (by counting the number of customers that eventually go to the parking lot via info provided by our platform)
- U - Update
 - Edit the parking data post he/she submitted
 - Edit his/her profile
- D - Delete
 - Delete a parking data post he/she submitted (whether this should be deletion or just made invisible by the system is TBD)
 - Delist the parking spots he/she reported
 - Delete account

Parking Lot Owner

- C - Create
 - Register a new account
 - Submit a new verification request
 - Submit new parking data AT his/her business, presented as a new post
- R - Read
 - Same as what the Drivers role can see
 - A dashboard showing
 - how ParKrowd is helping him/her get more customers (by counting the number of customers that eventually go to the parking lot via info provided by our platform)
 - how his/her parking lot is rated on ParKrowd
- U - Update
 - Edit the parking data post he/she submitted
 - Edit his/her profile
- D - Delete
 - Delete a parking data post he/she submitted (whether this should be deletion or just made invisible by the system is TBD)
 - Delist the parking lot he/she owns
 - Delete account

Private Parking Spot Owner

- C - Create
 - Register a new account
 - Submit a new verification request
 - Submit new parking data AT his/her place, presented as a new post
 - Create parking spot availability schedule
- R - Read
 - Same as what the Drivers role can see
 - View the availability schedule he/she created
 - A dashboard showing
 - how ParKrowd is helping him/her earning (by counting the parking fee he/she earned via ParKrowd)
 - how his/her parking spot is rated on ParKrowd
- U - Update
 - Edit the parking data post he/she submitted
 - Edit his/her profile
 - Update the parking spot availability schedule
- D - Delete
 - Delete a parking data post he/she submitted (whether this should be deletion or just made invisible by the system is TBD)
 - Remove the parking spot availability schedule
 - Delist his/her parking spot

- Delete account

Similar Already Existing

What similar applications exist on the market? (at least 3 with links and descriptions).
If this work is truly unique and no one has even done anything even remotely similar please explain your search procedure and how you came to this conclusion

1. **Spot Hero:** <https://spothero.com/city/nyc-parking>
 - a. Allows for reserved and scheduled parking in parking lots. Users can search based on when they want to arrive and leave and can plan for trips ahead of time. Has a list of popular spots
 - b. Average Pricing:

Parking Type	SpotHero Average Price Offered
Commuter Parking	\$23 - \$40
Weekend Parking	\$20 - \$40
Event Parking	\$23 - \$41
Overnight Parking	\$40 - \$61

2. **Way:** <https://www.way.com/>
 - a. Very similar to Spot Hero. System for reserving parking spaces in lots ahead of time. Has search and list of popular parking spots. Also have other services such as Insurance, Car Wash, Gas, and EV Charger with locations and promotional deals.

b. Average Pricing: (Starting Prices)

Parking Type	Way.com NYC Parking Rates
Garage Parking	\$24 - \$25
Uncovered Parking	\$20 - \$40
Garage Valet Parking	\$14 - \$90
Uncovered Valet Parking	\$14 - \$40

3. **Parkopedia:** <https://en.parkopedia.com/>

- a. Provides a map of parking lot availability and cost and allows the user to select how long they plan to park for, arrival time, and departure time. Street view shows all available parking spots in the zip code and neighborhood searched for, as well as the cost and time slots for those spots, but it does not include any real-time availability.

4. **Spacer:** <https://www.spacer.com/rent-out-my-space>

- a. Among other features, allows users to rent out their spot for an expected “up to \$400” a month profit.