

# **Parkit: A Solution for Messy Signs**

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Parking is a struggle in more urbanized city areas. New York City is one of those many places. Confusing parking rules and signs, which include alternate side parking and the 7am to 4pm rule can cause residents to become stressed and potentially earn themselves a parking ticket because of a misunderstanding. As fellow residents of New York City we have had encounters where we don't fully understand what the parking sign says and had to keep re-reading the sign only to realize we cannot park there. It is a waste of time and it creates frustration. As Computer Science majors we want to create a mobile application developed to provide information to a driver on whether they are allowed to park or not in simple terms. The information will be provided by scanning a QR code or by taking a picture of a parking sign.

## **Introduction**

Residents of New York have had it with parking rules and fines. Residents have accumulated a total of \$2.2 million because of not being able to pay their fines (Stephen Nessen, R. 2021). Due to lack of understanding, education on parking rules, and lack of public reminders residents end up incurring unexpected fines.

From street cleaning to no standing rules being on almost the same sign, the rules can be confusing. The signs have various instructions, from where commercial and noncommercial vehicles can and cannot park and further instructions. This just causes confusion for the average resident that isn't familiarized with the rules. The signs also have time limits regarding no standing zone. If the no standing zone is active, the car will be towed and the driver will have to pay the fine and this also includes the towing fees. The driver is also penalized for the towing as well and have those fees added on top of their already hefty fine.

This ends up with the resident being in debt and also inquiring about a 10% interest rate on their debt as well. A lot of information tends to cause confusion for the residents which has led to millions of dollars in fines for the residents causing financial hardship and stress. Although there are people who do understand parking signs, sometimes it is possible to forget that they have parked their cars on the street during street cleaning or during no standing zone time which can lead to unexpected fines.

This could even be seen on a personal level with our colleague Muhammad. Muhammad ended up getting sick around 6 months ago and wasn't able to leave his home due to wanting to keep others safe but also get himself better. However, he ended up forgetting about his car. Because he was supposed to move his car during the 7am - 4pm rule he ended up getting fined \$115.

What is trying to be accomplished is having an app that is able to notify a driver what spaces are available for parking by scanning a qr code in the area that they're in. This is an attempt to help make parking simpler for the driver by letting them know where they are able to park. The app will also be able to remind the driver when they need to move their car if this applies to them. The driver will no longer have to potentially drive around for hours looking for a parking spot just to go home. However, the app won't work as a gps app such as Google Maps. The app also won't be like Waze where it keeps you updated on the roads and traffic. The app simply tells you what the parking signs simply mean and if you are able to park when you scan the QR code.

## Project Description

- The mobile application being developed is something that can provide information to the drivers whether they are allowed to park or not in simple terms. The information will be provided by scanning the QR code or by taking a picture of the parking sign. Once the application has received the input information (scanned QR / picture of parking sign) the application will determine whether the driver can park their car or not and on what side of the street. The QR codes will be displayed under the existing parking signs. The decision on the app is made through the information provided in the initial sign-up process on the app and the current time. Based on this information the application provides accurate and relevant information to the drivers. To help beat the fines caused by forgetting the car was parked on the street, the application will immediately prompt the user after scanning the sign if they want to set an alarm which will notify them 30 mins before the no-standing zone activates. This will help users know that they will be reminded instead of constantly having to remember to move their car and stress over getting fine. Lastly, this application will collect data on parking behaviors which will be useful for the city to understand what are the busy parking spots and what streets need more parking spots. This application could also be enhanced to provide information on available alternate side parking spots. But currently, this is not the primary goal of the application. Our ambition is to provide NYC residents and other metropolitan city residents an opportunity to understand parking rules and reduce their financial burdens by avoiding unexpected parking fines.
- The QR codes will be distributed in phases. The QR codes will be printed on the metal piece which is durable and resembles the already existing signs.
  - Phase 1: Manhattan borough.
  - Phase 2: Brooklyn borough.
  - Phase 3: Queens Borough.
  - Phase 4: Bronx.
  - Phase 5: Staten Island.
- Drivers would benefit from being able to know when and where they are able to park. There would also be no fights between residents over who had which parking space or who found which parking space first. This would avoid all potential conflicts between residents and give everyone a space they need to park. (West Sider 2020)
- Potential customers would be common NYC drivers and or people visiting NYC. Some people aren't aware of most of the rules and regulations of NYC parking. These types of drivers exist because there is very little to no education provided on driving in NYC before obtaining a license. The application is also useful to people visiting and driving in the city. As NYC rules are a lot different from other states, these users tend to seek help from NYC 311 which is not allowed to help solve parking mysteries for callers.

- Some potential obstacles that need to be reviewed are the size of the parking space. All cars do not have the same size so even if there is a parking space available there is no guarantee that your car will be able to fit in said parking spot. Another obstacle would be app malfunctions which is something related to the app developers specifically with server maintenance and such. There is also the issue of the qr code/poster being torn/worn off and or undiscoverable if it's decided to go a paper/poster route. Lastly would be our competitors being ParkNYC and nycdotsigns.net.
- ParkNYC is an app which provides information about paid parking, their rates and indicates whether a driver is allowed to park or not. ParkNYC has notifying functionality which notifies a user about their time pending for the parking ticket.
- Nycdotsigns.net- is a website by NYC Department of Transportation, this website provides information about all the parking signs on the NYC maps and the exact information which is available on the NYC. This is a direct competitor the web application has a map and user is able to input their address to understand the parking signs on their street
- To ensure this application is distributed through out New York City, we would need the support from Department Of Transportation. The permission to install of QR codes will given by NYC DOT.

### **Budget & Initial Start-Up Cost**

Budget & Initial Cost		
Cost Categories	Amount	Time Frame
Application development	\$ 10,000.00	3-6 Months
QR code production	\$ 80,000.00	2-4 Months
Installing QR code around the city	\$ 30,000.00	3 Months
Advertising & Marketing	\$ 20,000.00	
Maintaince	\$ 3,000.00	Monthly
	\$143,000.00	

### **Conclusion**

Although being in development we are striving to be diverse from the rest. For example, while ParkNYC only provides information about paid parking spots our application will provide information regarding any parking spot whether it is paid parking or free alternative side parking. In our application, the user will only be notified before the start of street cleaning or before no standing zone activates.

For nycdotsigns.net, they do not have an application which can highly inconvenience drivers. Also nycdotsigns.net only provides exact information which is on the parking sign which does not help the users' confusion but can further confuse them. Our application will simplify the information and notify the driver about whether or not they can park, if yes then the app will give the time they are able to park and need to move their car if applicable. Lastly the application provides alarms set automatically without the user needing to set it up. These competitors do not provide these services. Making parking and its rules easier may take time but does overall help out a lot of NYC residents who struggle with finding parking and or parking rules.

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