

Project Report: **Curb-N**



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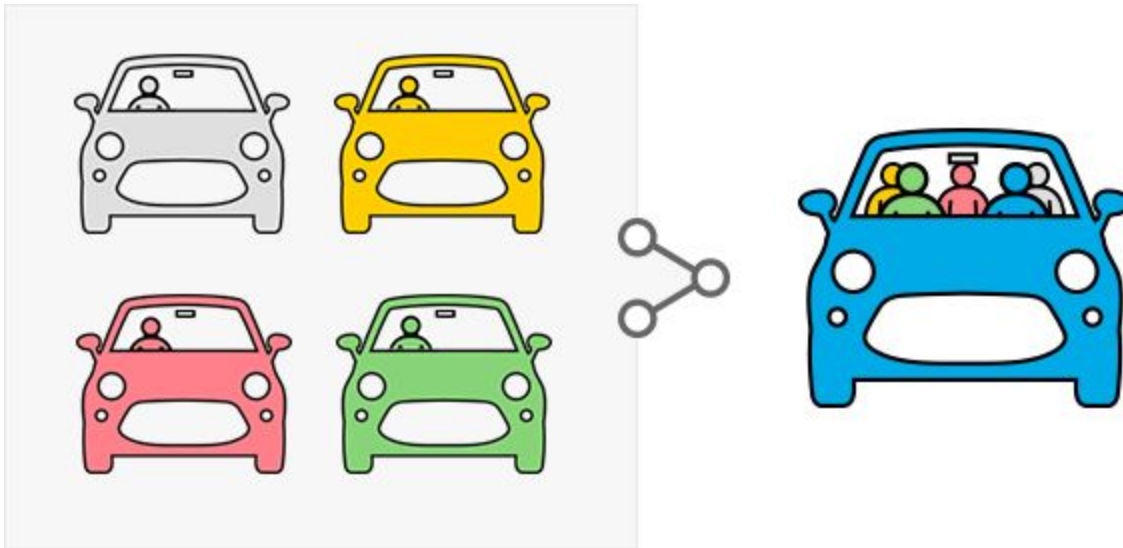
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Abstract

Every college campus is the birthplace for a different kind of adventure. With so many different people and so much diversity of interests, it might be hard to find the right adventure or the right people to experience it with. One of the best parts to a great experience are the kinds of people you meet along the way, so why not spend them with the kind of people who share similar interests with you? Curb-N is the app that will solve all these problems for you. Providing a great experience with a more personalized touch is what our event-based ride-sharing application is all about. Along with putting our users first, we aim to get to know them better by providing a friendly user interface that encourages exploration and recognizes specific user interests. Overall, whether you're a young, adventurous soul in search for your next adventure, or someone who is just trying to finally get out there, or *even* just someone who doesn't like to travel alone, Curb-N is the app that will always get you where you need to be.



Introduction



System Overview:

We're introducing a new **innovative ride-sharing app** intended on helping users connect to other like-minded travelers with similar interests. This web application will be a centralized mix between a user-friendly event planning application as well as a ride-sharing aid. Although there are ridesharing applications and event based applications currently on market, there is yet to be a healthy union between the two.

Although the idea of ride sharing is generally straightforward, there is an important difference with Curb-N, spontaneity and routine. Rarely you find those words in the same sentence, but this is the **functionality** we are trying to provide through the use of Curb-N. Through our application, **we've developed a more personalized and cheaper alternative to other apps out on the market today.** The more you use Curb-N, the better our technology will get to know you, thus leading to a more personalized and rich experience. By getting to know the user better, our system can then **recommend different kinds of events** that are going **on** in their area as well as help the user **find drivers and other passengers with similar interests.** Going to new events and making a couple new friends along the way is a sure-fire way to create memorable, long-lasting experiences. Later on in the report we will talk about our technology and how we plan on getting everything integrated and implemented within Curb-N.

Current State of Art

1. Information retrieval

Our application will begin with queries to the Curb-N server, with actions being the retrieval of web pages for user views, placing user requests (for transportation/notification of events), terminating requests, available events to search and display, and a reminder system for events.

We will be using a template for our website, for views such as logins/post requests/ event requests/drivers and riders/ and notification reminders to standardize user experience. Further detail will be explained while in the process of creating this project.

We will develop a search system algorithm that uses a ranking system which is based off of a user's preferences to better match drivers and riders. The preference system will comprise of two key object, interests and location. Interests will be tagged as keywords and have an integer assigned for favorable rating on a scale 1 - 10 (1 being least favorable, 10 being definite interest.). The search system will take into account the location of events to driver/riders, and past events to accurately gauge the likes and dislikes of each users. This will be done with consideration as to how we rank disseminated information, as described in lecture.

We will also be using the Pushover API to give users the ability to be notified of recent changes to any requests/events that will affect them (change to schedule, seating issues, cancellation, issues of similar content). This can be integrated into our web app, and can send notifications through the browser/or phone as desired.

In general, we will be using the Google Map API to display relevant graphical information on the location of each request's users, as well as the events they will be going to. We will also be looking into the API library to see if there is a function to pull images/events of interests given an address, as it can better inform our users of what to expect upon arrival.

2.Database (storage on server)

All data will be stored on a MYSQL database provided by the Amazon Web Services (AWS). We will be using their free tier cloud server plan. There are three tables which we will be using: User_table, User_preference_table, and Event_table.

1. User table - This will house all the necessary info, preference, and requests each user has.

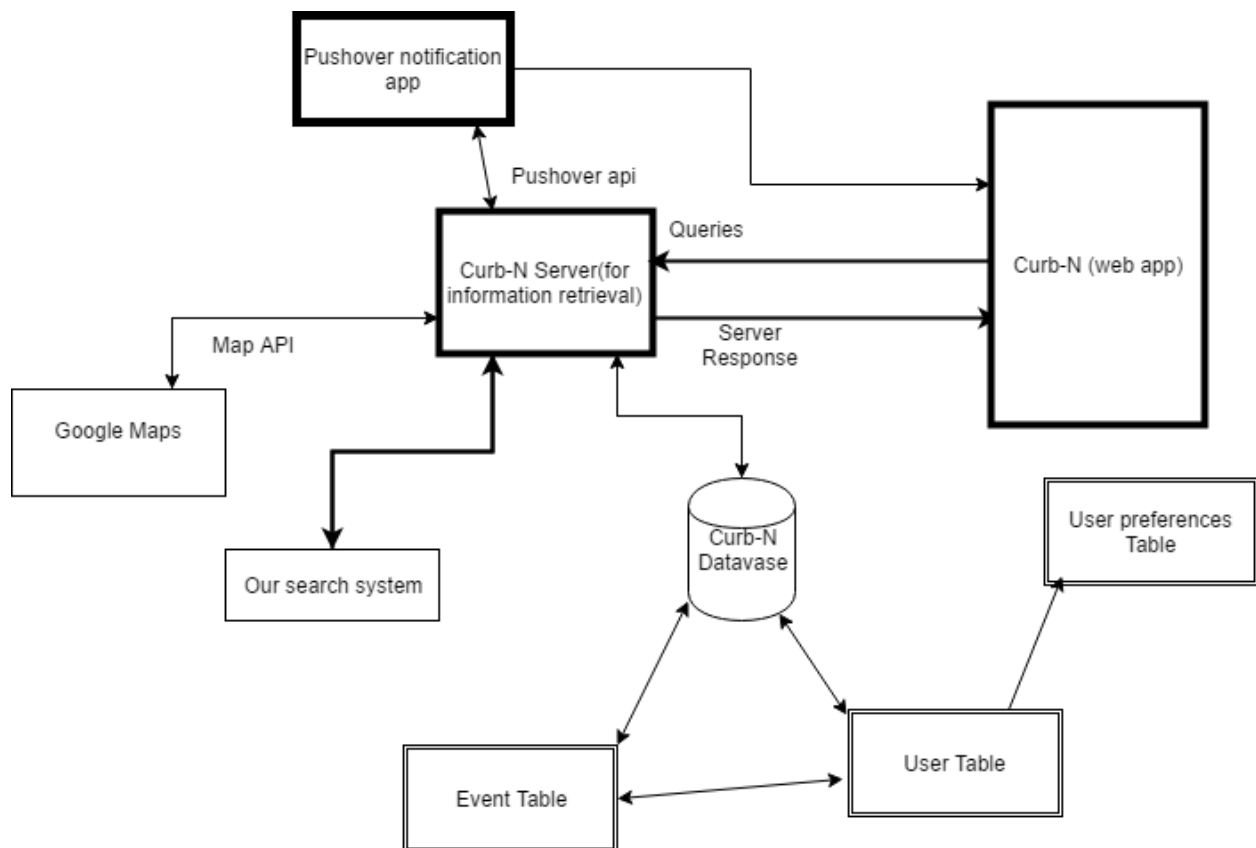
- a. Account(email) - string
- b. Contact_info(name,email, phone, etc) - string
- c. Preferences (table object)
- d. Status (driver/rider) -> string
- e. Rating (Just general evaluation of users) - double
- f. Events-requested/going to (table object)



2. **Preference Table** - This table will contain information necessary for our ranking and search system to work.
 - a. Interests (tag objects) - strings, keywords for ID i.e. (concert, festival, sports, transportation, etc)
 - b. Current location (will contain user/event info depending on action) - strings
3. **Event table**- This table will contain all info regarding the event, such any users who has requests to a specific event. Fees and description of all transaction will be given here.
 - a. Events (tags objects) - strings
 - b. Title (name) - string
 - c. Start_time (datetime)
 - d. Pick_up_time (an agreed upon time) - datetime
 - e. User (who requests a ride/pickup.) - User
 - f. Fees (for gas money or other topics) - double, will have a trip calculator to give rough estimate to users
 - g. Description (Mandatory, will detail any requirements to attend the events specifically)- string
 - h. Location (Mandatory, displays the location of the event and drivers/riders) - String

Architecture

Our project contains three main components: Pushover, the Curb-N Server, and the Curb-N web app. The Pushover API will provide a convenient way for us to notify the users of any changes of events related to them, and will take input from the server and returning the output to both server and web app. Here are our interactions.



Curb-N applet(Web app):

When it comes down to it, at its core, Curb-N is a ride sharing app tailored to make road-tripping a more personalized and easily accessible experience. General interaction with servers are queries to and response from it. Objects returned to the app are notifications/updates, listing of current events/requests, and results from using our search system in the request creation process.

- To access Curb-N and all of its features, students are going to need to sign up with a university email in order to verify proof of enrollment.

- Once signed up, members will have the option to pick and customize what their interests are, as well as the kind of events they favor going to. In doing so, our search algorithms will provide a more personalized experience, recommending and notifying the user of events happening nearby that may interest them, as well as drivers in the area who plan on road tripping to that specific event.
- Once the user has settled on an event they would like to attend, they will have the option to choose to attend the event as a driver or a passenger.
- Now as a passenger, the user will have the opportunity to search for a driver whom they wish to ride with. Our app will layout all drivers who plan on driving to the event, as well as their ratings from past trips, and the amount of spaces left in their car.
- Once a driver has been requested, the chosen driver will have the opportunity to accept or deny the passenger's request for a seat. If accepted, both the driver and passenger will receive a confirmation notification along with the ability to message one another to figure out times and locations for pick ups and drop offs.
 - Anytime before the day of the scheduled event, a passenger may choose to cancel his or her reservation in a car, however there will be a cancellation fee tacked onto the passenger's bill.
- Another feature within Curb-N that would benefit drivers is the ability to pool gas money. Driver's have the option to set an agreed price for gas and all those passengers who chose to ride along will split the charge.
- Finally, once the trip has been made and all passengers have reached the destination safely, passengers have the chance to tip their driver.
 - Those drivers who are able to maintain a high ranking will have higher placement on any driving listings they wish to participate in.
- The more trips you take, the more personalized your experience with Curb-N becomes.
- Curb-N comes along with a state of the art notification system
 - Our system will notify you of any important events coming up that may tailor to your interests
 - It will send you any notifications regarding any of your trips(driver acceptances, messages, receipts, etc.)
 - It will provide reminders of upcoming trips you may have planned as well as any remainders your driver has set for you
 - Ex. Location of pick ups, time of pick ups, gas budget

Curb-N server:

The Curb-N server will run the search system algorithm on queried database info, as well as handling queries from the users and sending the response through a web browser. The server will house its own database containing the information of each user, their preferences, and events they will be attending, which is used to form a ranking/priority for pickups. It will use the Pushover notification system to send alerts to users of their events and drivers pickup, as well as any relevant information as described by their event rankings. The Google API will be integrated to the website so as to allow users to drop pins/address/ see relevant information pertaining to their search. We might implement an in-app messaging system, an option for users who want a contact/history log of people who've they talked to.

Pushover API:

We will use a paid app to send notifications to users, if changes to an event/request/user has been detected via input from user/event objects. The response will be sent directly to the user's preferred manner of contact (email, text, or desktop).

Details of Components

The tools we will be using for our projects are : Google Maps API, Amazon Web Services (AWS for the server), MySQL, WIX website creation, and the Push Notification application.

The Google Map API is used to give users a graphical representation between events, users, and themselves.

The AWS will be used to host our website, as well as the database to our Curb-N app. Alongside AWS, we will use a feature that integrates MySQL into the server for information retrieval.

WIX will be used to design and polish our website templates.

The push notification app will be used in a functionality that keeps tracks of a particular change created by the user.

User Studies and Evaluation

Although still too early to evaluate any success of the application, when evaluating it will be done so on the following criteria.

1. Qualitative Data
 - a. Any methods of use not intended by team, can it be built in better
 - b. Is choosing being a driver or a passenger preferred
 - c. Could loosening university requirements increase usage
 - d. Popular events in particular to area or users
 - e. Relevance of presented information
2. Quantitative Data
 - a. Likelihood of repeat user
 - b. Number of users signed up

Conclusion

In conclusion, the application to be developed, Curb-N will focus on creating experiences by pairing passengers and drivers with a common goal together. By putting two people that would have otherwise not met and focusing on the experience the cost of the ride can be made cheaper, specifically since passengers are more often paired with drivers who are nearby.

Our information retrieval process will stressed the importance of interests to events as well as location of event related to the user. This is done by using all relevant data collected, the most important weight when making this ranking is the proximity between a passenger and driver, this allows for a dramatic reduction in price. A keyword feature will also be used as the basis of our ranking when users give their preferences.

The specific tools that will be used to implement this system will be comprised of WIX website creation and borrowing from what is already in place such as the Google Map API. All hosted on the Amazon Web Service alongside the database which will use MySQL for information retrieval.

All queries will be done through the web app, and all responses received will be from either the Curb-N server or the Pushover notification app. The server will make use of the Google API and Pushover API to better enhance user experience as a result from our search engines.

The reason that we decided to do this was because of the missed opportunities that occur everyday when people go to the same place or vicinity but each does so alone. The creating of a new encounter is invaluable along with a cheaper ride than provided by competing services.