

Preliminary Proposal:
CabX
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Language & Platforms:

- iOS front-end (Swift)
- MongoDB Stitch (serverless platform for backend)
- Mac
- Database: MongoDB Atlas or AWS DynamoDB
 - Storing user profile information (e.g. past rides)
 - Storing user's calendar events

Paragraph Description:

Our team would like to create a travel app specifically targeting ride-hailing services. We envision being able to input our current and targeted location into the app and retrieve prices and travel times from popular ride-hailing services, such as Uber and Lyft. In addition, the user would be able to sync their Google calendar with our app so we can send them reminders when it's time to leave to be sure the user can get to where they want to be on time.

We will use MongoDB Atlas, MongoDB's DBaaS, to store username, passwords and user information (e.g. search history). We will leverage the Uber and Lyft APIs to get travel data and to request a ride. If time permits, we will also use Google and Facebook authentication providers through MongoDB's BaaS, Stitch, to allow users to log in with their existing Google and Facebook accounts. We will use the Google Calendar API to integrate our app with Google calendar.

For our MVP, we will focus on integrating data gathered from two popular ride-hailing services into the app. If successful (and if time permits), we will integrate other ride-hailing services available for use in the NYC area.

User Stories:

MVP:

CABX-001: As a user, I want a list of the popular ride-hailing service to and from a destination so I can ensure a ride-hailing service is available near me.

- Conditions of satisfaction:
 - Input: From destination (latitude and longitude) & To destination (latitude and longitude)
 - Success criteria:
 - i. Receive a list of ride-hailing services including prices that will take the user to the specified destination
 - ii. If From destination is not a valid address - show an error message
 - iii. If To destination is not a valid address - show an error message
 - iv. If there is no ride-hailing service available right now - show an error message
 - Failure criteria:
 - i. User requests car with From destination & To destination, but displayed list shows rides for a different From/To destination combination

CABX-002: As a user, I want the list of ride-hailing services available near me to be sorted by price estimates so I can choose the cheapest route possible.

- Conditions of satisfaction:
 - Input: From destination (latitude and longitude) & To destination (latitude and longitude)
 - Success criteria:
 - i. Receive a list of ride-hailing services, sorted by price estimates (cheapest to most expensive)
 - ii. Similar to CABX-001
 - Failure criteria:
 - i. User requests car with From destination & To destination, but displayed list shows rides for a different From/To destination combination
 - ii. Received list is not sorted
 - iii. Received list is sorted from most expensive to cheapest

CABX-003: As a user, I want the list of ride-hailing services to be sorted by ETA so I can choose the fastest route to my next destination.

- Conditions of satisfaction:
 - Input: From destination (latitude and longitude) & To destination (latitude and longitude)
 - Success criteria:
 - i. Receive a list of ride-hailing services, sorted by ETA (shortest to most longest)
 - ii. Similar to CABX-001
 - Failure criteria:
 - i. User requests car with From destination & to destination, but displayed list shows rides for a different From/To destination combination
 - ii. Received list is not sorted
 - iii. Received list is sorted from longest to shortest ETA

CABX-004: As a user, I want to log in to the app with a username and password so that I can access my complete search history from my profile.

- Conditions of satisfaction:
 - Input: Username & password
 - Success criteria:
 - i. If username & password is a valid (known) combination, user receive a success message and is logged in
 - ii. If user is logged in, he/she has access to their profile information (e.g. past rides)
 - iii. If username & password is an invalid (unknown) combination, user receives an error message and is not logged in
 - iv. If user cannot remember their username & password, he/she can click a “forgot your password” button to reset the password via email — resetted password will be valid to use with their existing username
 - Failure criteria:
 - i. If username & password is a valid (known) combination, user is logged in to another account (different username)
 - ii. If username & password is a valid (known) combination, user is not logged in (e.g. does not see their profile information)
 - iii. If user resets their password, the new password cannot be used to sign in with their existing username

CABX-005: As a user, I want to receive a “time to leave” notification so that I can ensure that I arrive to my next destination on time.

- Conditions of satisfaction:
 - Input: Sync with Google account/calendar
 - Success criteria:
 - i. If the user syncs their calendar, the user will receive a notification for when he/she has to order the ride-hailing service to arrive at their destination on time
 - ii. The user receives the notification with an appropriate time window (e.g. 15 min before ordering the service to account for user delays)
 - Failure criteria:
 - i. User does not receive any notification during the time that they should order a ride-hailing service
 - ii. User receives the notification too late (will arrive too late at the destination)
 - iii. User receives the notification too early (will arrive > 30 minutes earlier at the destination)

CABX-006: As a user, I want to save previous searches (search history) so I can quickly look up my most recent destination addresses.

- Conditions of satisfaction:
 - Input: User is logged in
 - Success criteria:
 - i. If user is logged in and requests a ride, the ride is shown in their search history
 - ii. If a user is not logged in, the search history is empty
 - Failure criteria:
 - i. If the user is logged in, the search history contains searches he/she didn't perform
 - ii. If the user is logged in, the search history does not contain searches they did
 - iii. If the user is not logged in, they can still view their search history

(As discussed with TA, the wish list's conditions of satisfactions will be added when moving tickets to the backlog/next version)

Wish List:

- CABX-007: As a student, I want to save my most frequently traveled routes so that I can quickly get an overview of available routes to school without having to type the address every morning.
 - Ensure the student is able to:
 - View his or her top 5 most frequently traveled routes while logged in.
 - Use those routes sometime in the future if the routes are still available.
- CABX-008: As a user, I want to login using my Gmail or Facebook account so that I can avoid having to remember another username and password.
 - Ensure the user is able to:
 - Successfully log in with a Gmail account.
 - Successfully log in with a Facebook account.
- CABX-009: As a New Yorker, I want to compare ride-hailing services with the MTA so that I can choose the fastest route.
 - Ensure the new yorker is able to:
 - View the ETA for the MTA.
- CABX-010: As a city dweller, I want to compare ride-hailing services against other forms of transportation such as buses, city bikes and walking so that I can choose the best route available (the fastest route, the route that passes a specific point of interest, etc.).
 - Ensure the city dweller is able to:
 - Receive a route, price estimates and ETA for the bus
 - Receive a route and ETA for walking
 - Receive a route and ETA for riding a bike