# CENG-322

# Deliverable 1

EzLot
Ezpark

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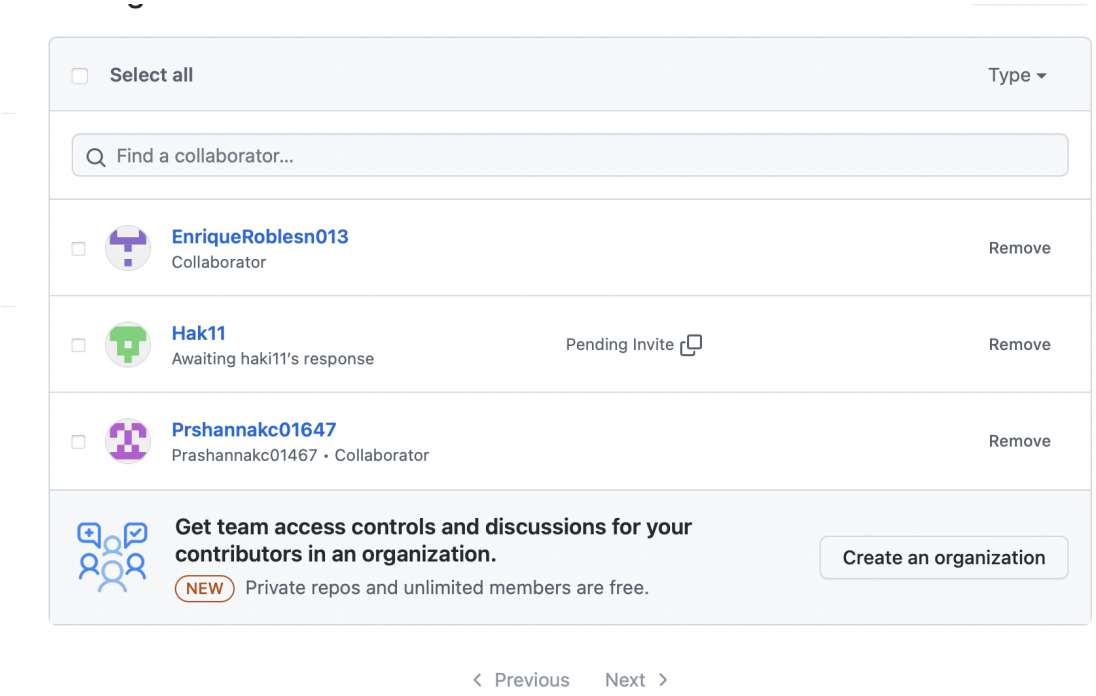
**Link GitHub Repo. All members must contribute to the repo.**

https://github.com/AkashSingh8137/ezpark




**Describe the project goals and final vision.**

The goal of our project is to create an intelligent parking lot that makes it easier for people to find parking in crowded cities such as Toronto. The app will have multiple features such as booking, remote pay, parking availabilities, and easy parking extensions.

**2. Describe the software aspect and hardware**

**Software :**

the software will have 4 actions to ensure an easy and relied experience

Visual display of all the parking spots available
Allows use to pre-book a spot before arriving at the parking lot
Allows the users to pay for parking through the app
There will be an action that displayed the location of your care and the amount of time remaining
There will also be a section for the users to add time to the account to make it easy for the user

**Hardware:**

**Ultrasonic Proximity Sensor : (Parshanna kc N01467778)**

The proximity sensor will be used to see if the parking spot is occupied or available to be used. This will be done by checking if there is a reading on the Proximity Sensor if there is a reading the light and app will change to red at that location to indicate that the spot is occupied

**NFC reader: (Akashdeep Singh n01458137)**

The NFC reader will be used to allow users to gain access to the parking lot.
The NFC reader can be used when you first arrive at the gate to allow access to the parking lot and it can be used at the side entrance so the customers can get to their vehicles. Additionally, the NFC sensor can be used as a payment method

**Infrared Sensor:(Enrique robles n01302490 )**

The infrared sensor is used to detect if the vehicle has crossed over the gate. After the infrared sensor has detected that the vehicle has passed through the gate it will start a timer for 30 seconds and press to close the parking lot gate.

**3. Describe the screen flows.**

Screen 1:- This screen will show which parking spots are available.
Screen 2:- This screen will collect information from users like Name, Car makes/models, Car number plates, and how much time they need to park.
Screen 3:- This screen is for the payment.
Screen 4:- This screen will show your confirmation no. and details about your bookings.

**Screen 1 -> Screen 2 -> Screen 3 -> Screen 4**

**4. How will you Incorporate the feedback provided through the interview?**

We were originally going to base our project on home automation however we were advised against that because a large number of groups we are doing similar projects with that advice we pivoted our project to design a smart parking lot system**.**

Regarding our smart parking app, we were originally going to have only 3 elements

Element 1- Would display all the spots in the parking lot and display which ones were occupied and which ones were available

Element 2- was going to be used to display the amount of time remaining before the customers had to go a collect their car

Element 3 - was going to be used to open a close the gates to enter and leave the parking garage.

However, after discussing with the professor he advised us to add a payment and pre-booking systems to our apps

**5. Demonstrate how you are planning to satisfy to read/write from the DB which is hosted on the cloud.**

We are thinking to use SQLite for the database. We can make the database table there and read and write the data accordingly from there.

**Project Scope:**

We want to develop an app that is linked to a smart parking lot to do that will need 3 sensors alongside an app that can interact with those sensors. We will know that the project is complete when the app can rarely user information to the smart parking lot additionally when the app updates its parking availability due to the changes in the sensors.

**Theme (two epics and 3 stories for each epic)**

**Theme** = fill empty parking spots in crowded areas.

**Epic** = use a mobile app to help people find empty parking spots reliably

**Stories** = text message capability whenever a parking spot is available

= emails to reserve a parking spot

= function to let users know when a spot is full or empty

**epic =** help businesses get customers to use their parking lots through our mobile a**pp**

**Stories** = quick payments through the app

= display of all parking spots in the app

= function to let users say how much time they want to stay parked