Project Proposal
Park Every Car (PVC)

Team Members
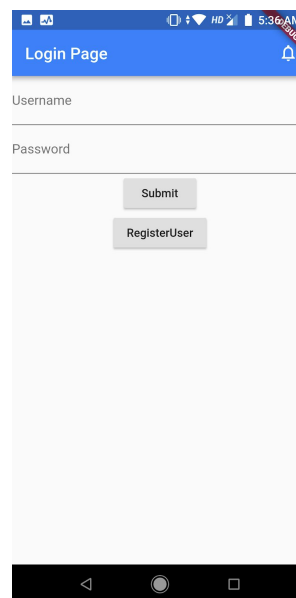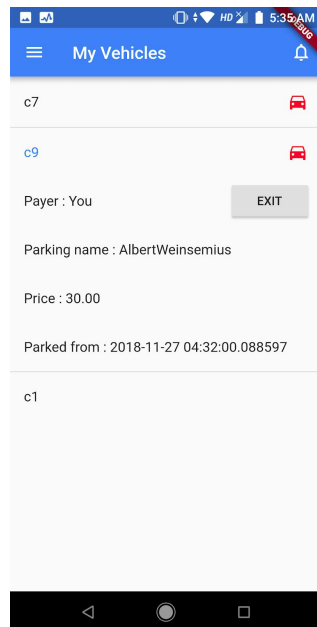
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Introduction

We have made an automated car parking ticketing system. We have implemented a new application for users to make payments for using a parking site by paying through an online wallet. We planned to make the ticketing system faster and efficient by automating it.

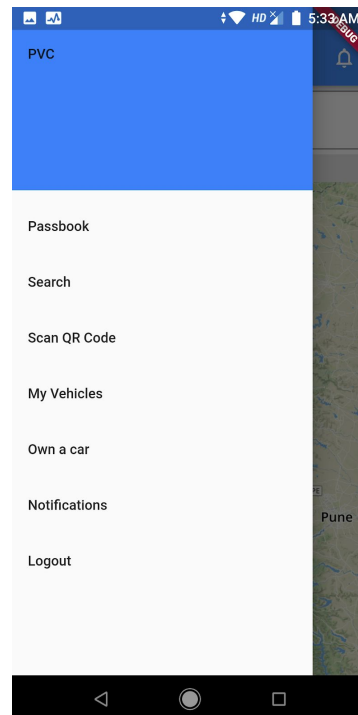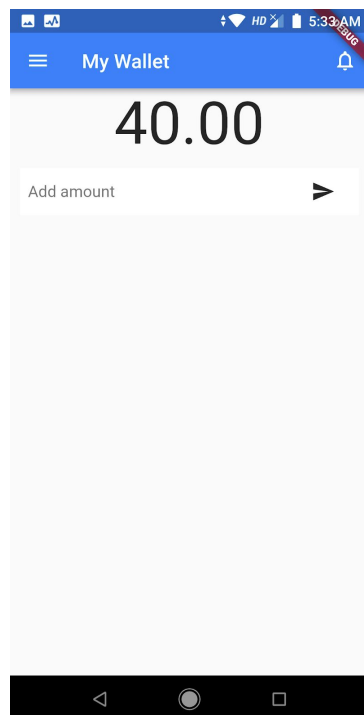## Implementation Details

User Login

- Every registered person has his/her account linked with our app.
- Gives the details of cars owned by the user and allows him to manage these. This includes the ones which may be shared between different people/accounts.
- The user can also view nearest available parking centres with available space and also the per hour fares.
- Since a car may be shared, any one of the registered owners can choose to pay for the car. This may help in case someone runs out of money and may ask his companion to pay.
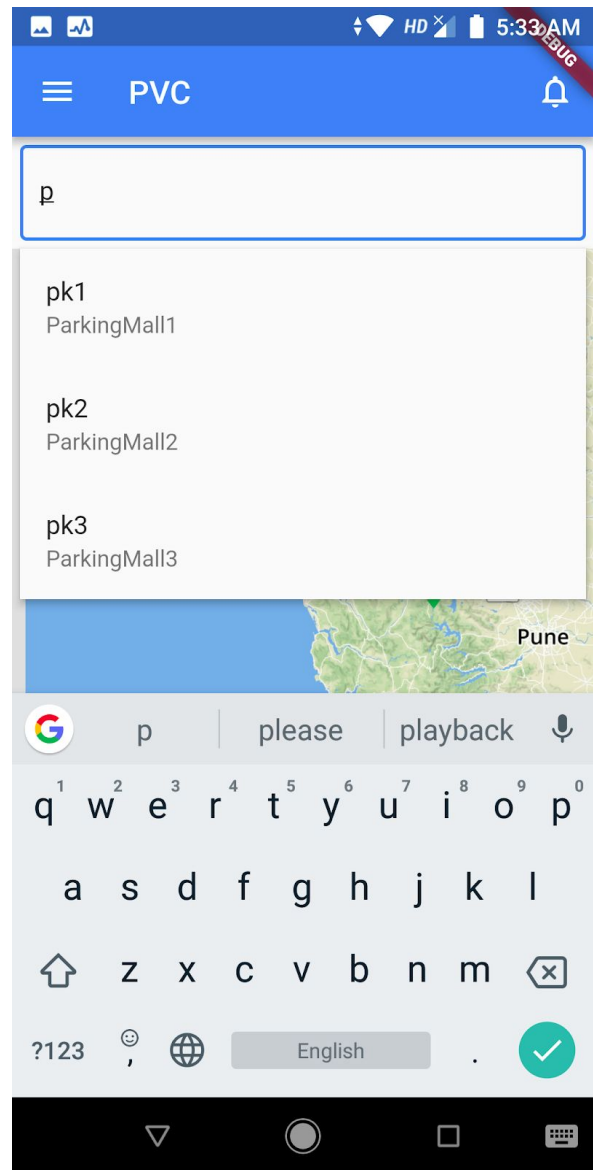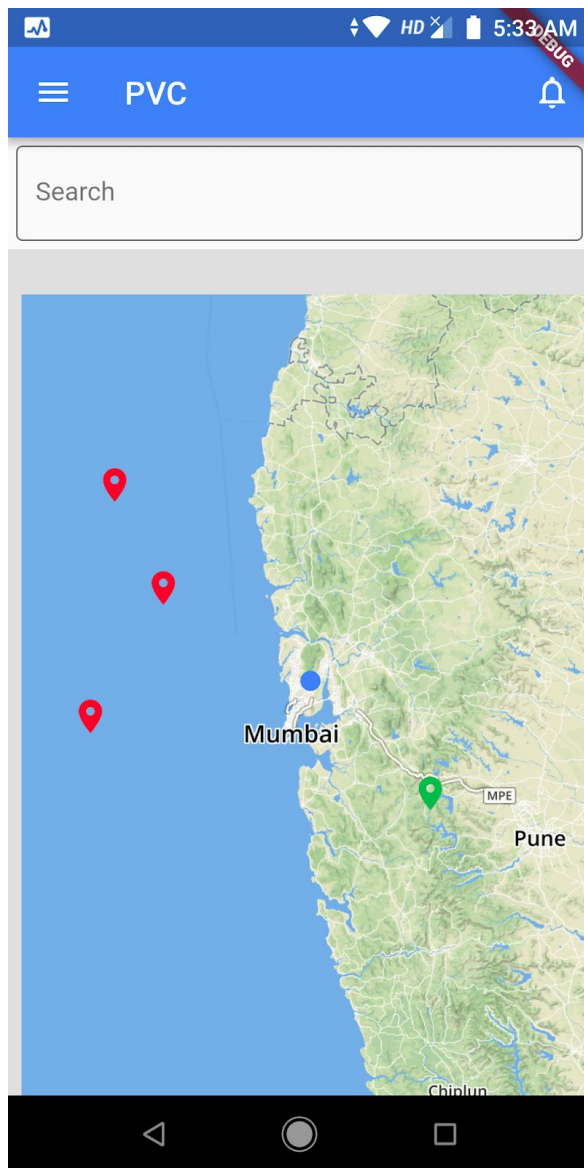
Parking
- A user can scan a QR code at the entrance of the parking, following which the driver is allotted a space to park, based on the number of available parking spots on different floors.
- The number of empty spots is tracked to prevent overfilling. When leaving, the user can tap on the Exit button in the My vehicles page to stop being charged.
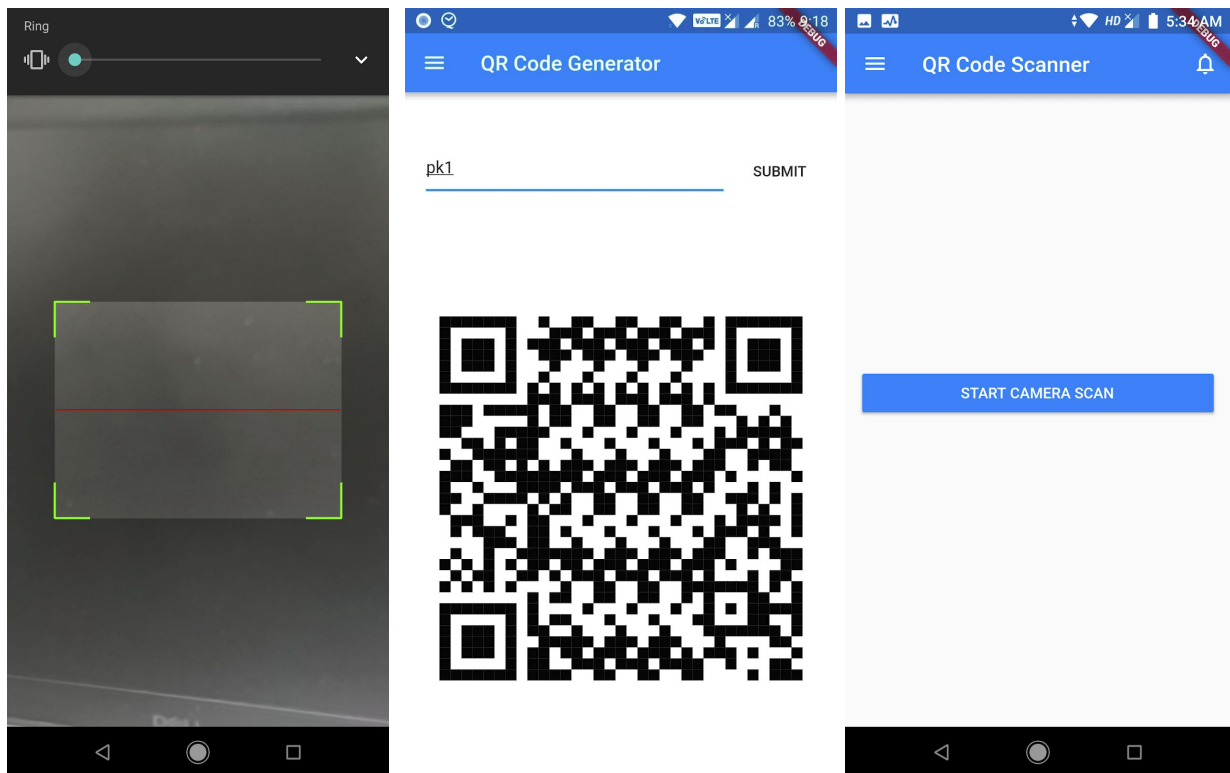
Payment Wallet

- A wallet is with the account of the user, from which money is deducted at regular intervals, by a backend script running every five minutes.
- It checks for all the cars currently parked, if the last paid time was an hour ago, charge the payer.
- This is done so that we can remind the users to recharge in case they are low on money.
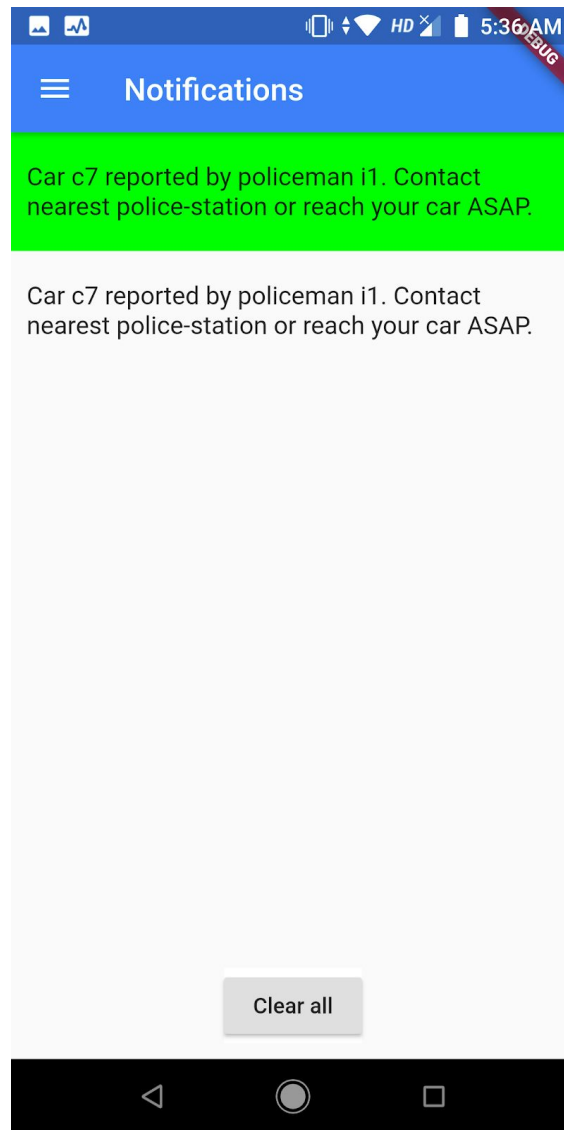
Map

- We have also incorporated a map feature in the app. On logging in, a map is visible on which there is the current location of the user (using GPS support) and also all the nearby parking spots (including streets and parking malls).
- The user can choose any of them by tapping on them or even by searching in the search box which retrieves parking locations nearby from the current location. Following the choice, we can park our car at a suitable place.
- There is also a feature to park on the street which is highlighted by a green marker on map clicking on which retrieves the number of free blocks available.
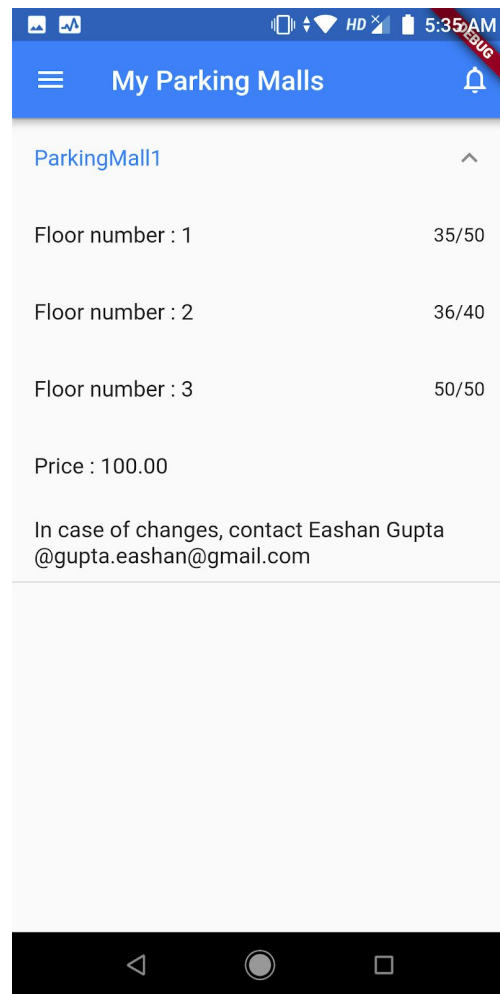
QR Code Scanner

- The car owners have been provided with a feature of scanning the QR codes present at the respective parking area of the malls.
- On scanning the QR code, the car owners are redirected to a page which specifies the vacant spaces on different floors.
- These QR codes are to be put up by the mall owners beforehand at the site of parking areas with their key corresponding to the respective IDs of the parking areas.

Notifications

- We have also added the feature of notifications.
- Notify the user when the wallet balance is low and needs to be recharged.
- The user is also notified when a policeman flags the car. This may be due to the car being parked and the person not paying the required fees via the app.
- He can also manage these notifications as the already read and new unread notifications are shown in different colours.
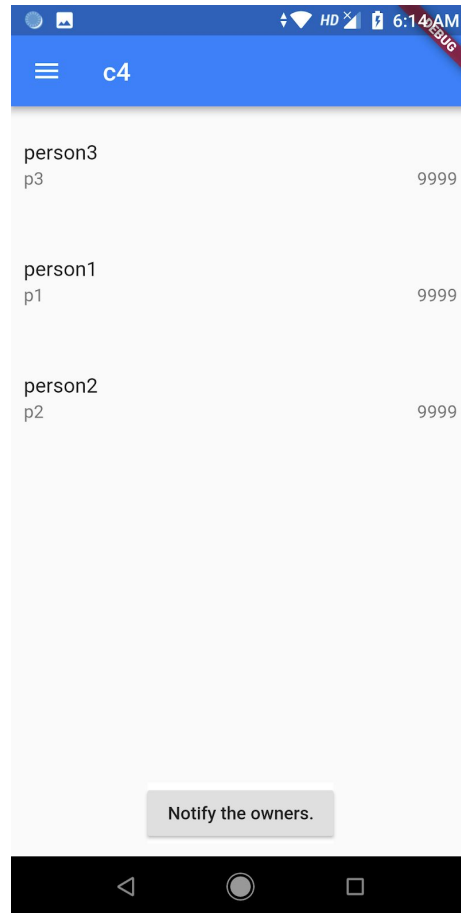
Owner Mode

- The owners of the parking places can log in at any time to view the current status of their parking malls.
- They can observe the number of empty spaces and the total revenue collected. The owners though can't change the prices of the parking malls as they may change it for some time and tend to cheat people.

Streets and Parking Malls
- We have also added a feature to park on a street and collect revenue from them (similar to what happens in the US but automated).
- They are not owned by an individual currently but are shown on the map with a different colour and maintains information as the number of empty spaces.

Parking Police

- If any parking personnel wants to know the details of any parked car, he/she can do so by filling the license number of the car (called as car ID in our database) after logging in.
- The details include the owner's name, time since parked, etc. will be displayed. There is also an option to send a message or give a reminder to the user to contact him back in case of a fine or a simple reminder for overtime.