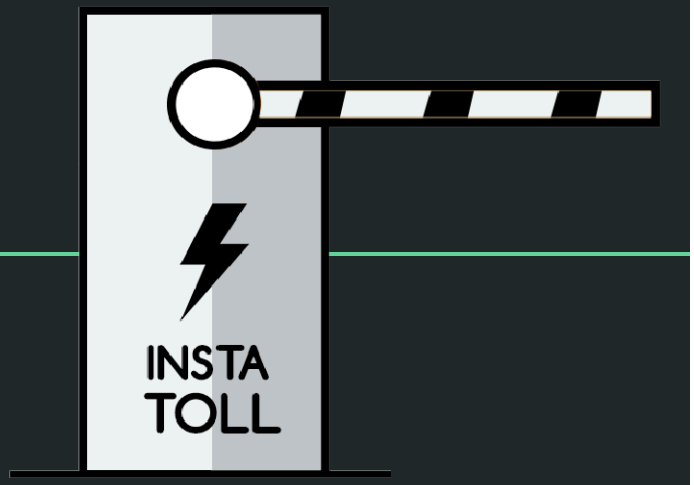
INSTA TOLL



Drawback of Current System:

Suppose, If there are 100 manual toll-taxes system and everyday 100 vehicles cross through each system, then No of vehicle that pass through one system yearly= 100 x 30 x 12 = 36,000. No of vehicle that pass through 100 system yearly= 100 x 36,000 = 36, 00,000

Assuming cost of 1 liter fuel = Rs.75 Total cost of fuel consumed by 36, 00000 vehicles = 75 x 36, 00,000 = Rs. 270,000,000/-

The above is the money wastage under the consideration that the vehicle stops for 60 second at the toll system, and 100 vehicles pass through the toll plaza each day and there are 100 toll plazas.

Benefits of our System

Minimum dependency on Internet

Can be used for Non RFID cars(Image Processing).

No need to open separate Bank account

Public Convenience Services like Petrol Pump, toilets etc.

Less Manpower Required.

Notification to the police in case of any criminal offense.

Seperate wallet for the app

Benefits of our system(Contd..)

Fewer or shorter queues at toll plazas

- Faster and more efficient service (no exchanging toll fees by hand)
- The ability to make payments by keeping a balance on the card itself
- The use of postpaid toll statements (no need to request for receipts)
- Lowered toll collection costs
- Better audit control by centralized user account
- Expanded capacity without building more infrastructures

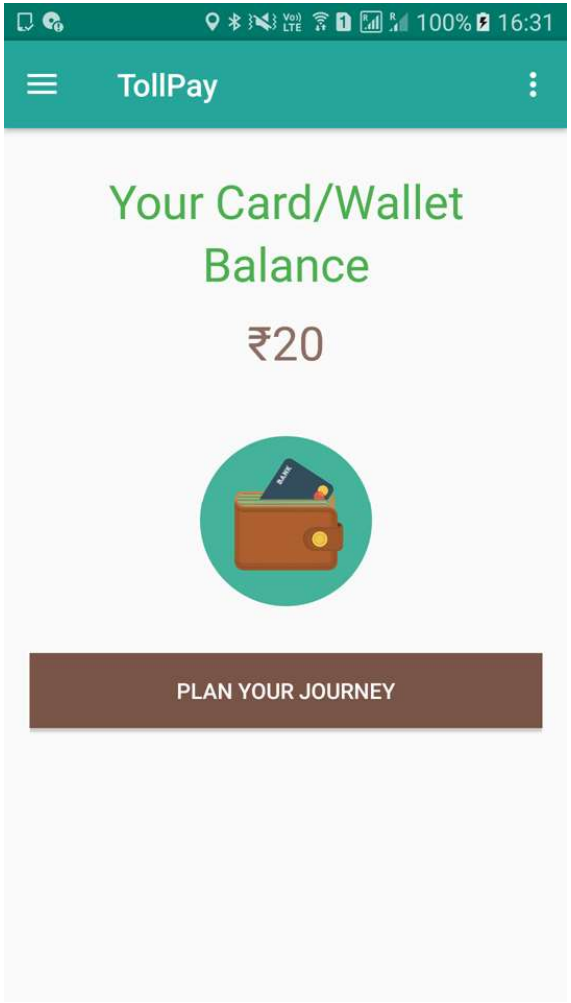
Our system includes:

1. User will pay through his toll through **Android Application .**
2. After paying the toll when the user reaches the toll, its number of axles will be checked through **IR sensors**.
3. The vehicle having the RFID chip is uniquely identified by reading the chip and the RTO data.(on the back-end)
4. The vehicle not having the RFID chip is uniquely identified by **Image Processing System** and the RTO data.(on the back-end)
5. Other services like **notification** to the **police**, Emergency services are also provided on the app.

ANDROID APPLICATION

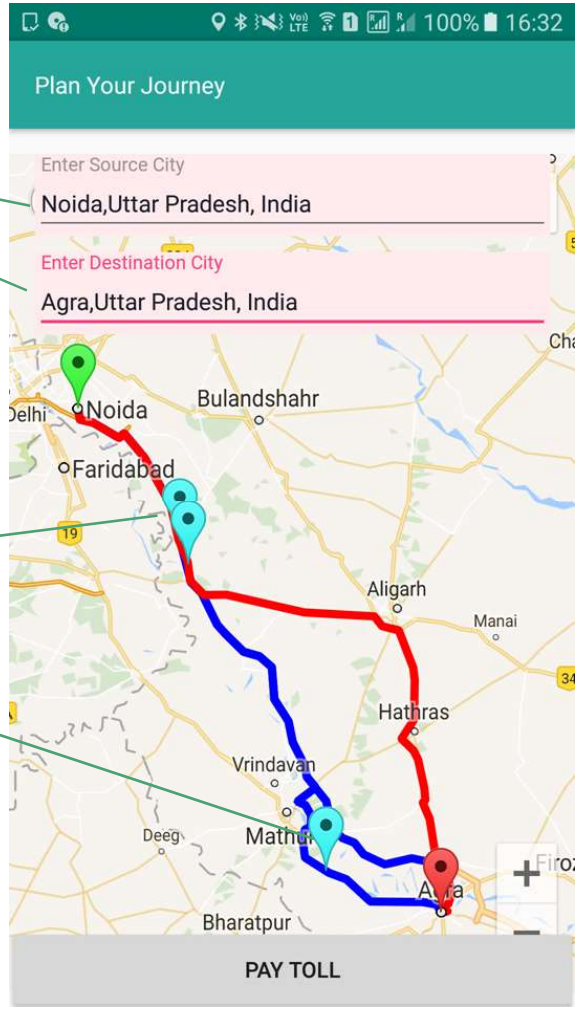
Simple Card/Wallet System:

Through Card/Wallet balance, users of our app i.e. customers/public passing from tolls can easily pay their tolls without filling multiple times information of their cards which makes our app experience better



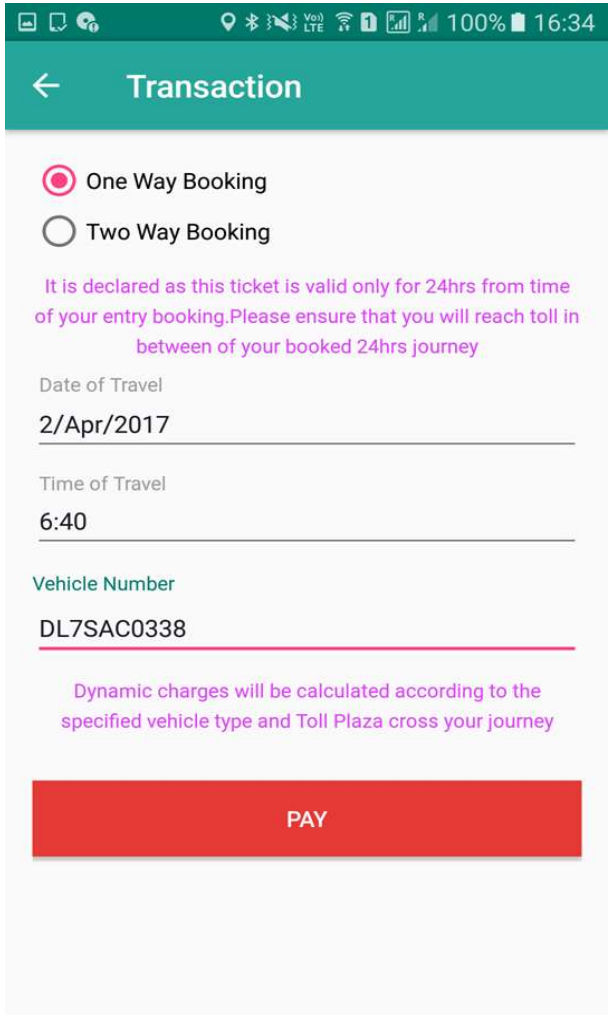
Multiple Paths From Source to Destination will Present to the user in the Map Polyline form.

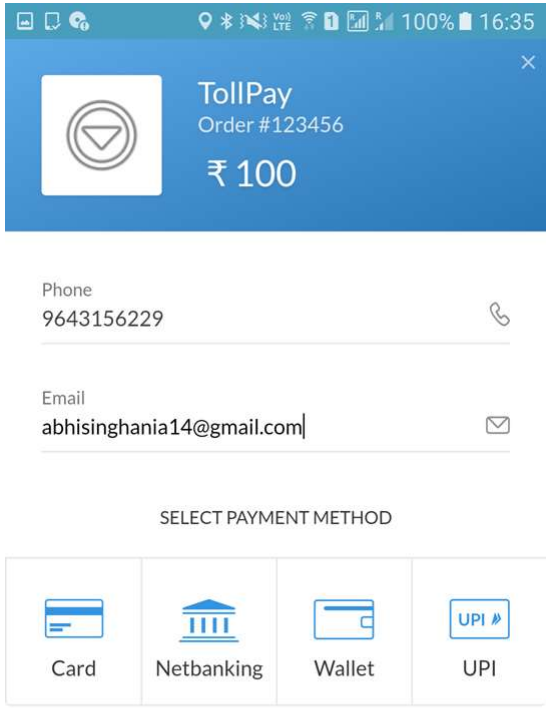
Innovative:
Also Toll with their accurate latitude and Longitude will be shown to the user in between these Paths.
This feature currently unavailable with google maps and even it doesn't work in **NHAI website**



One-Way or Two Booking can be selected by the users for **affordable chargers.**

Date and Time of Journey will be asked by the users so that users can book their toll journey with **future dates.**

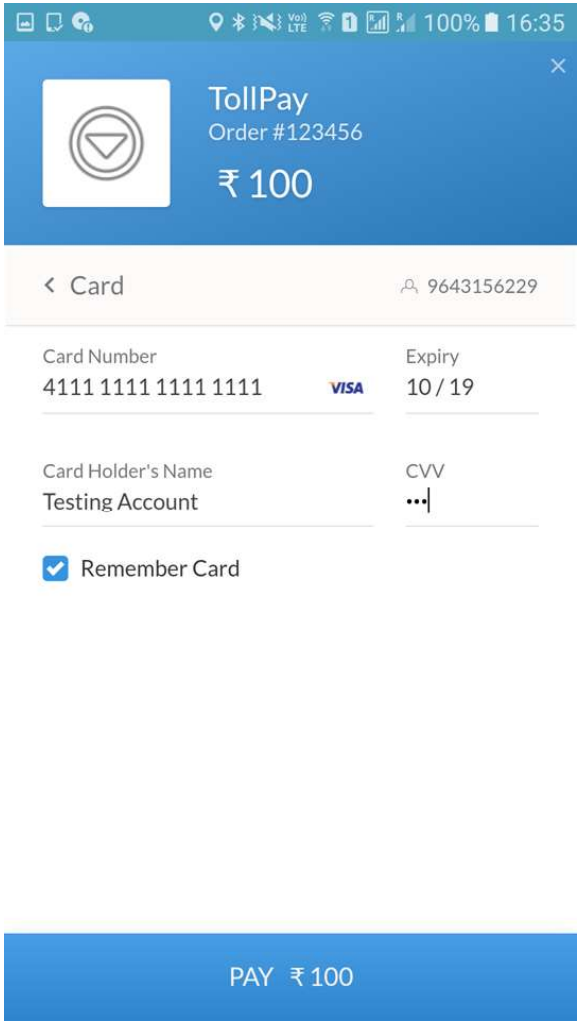


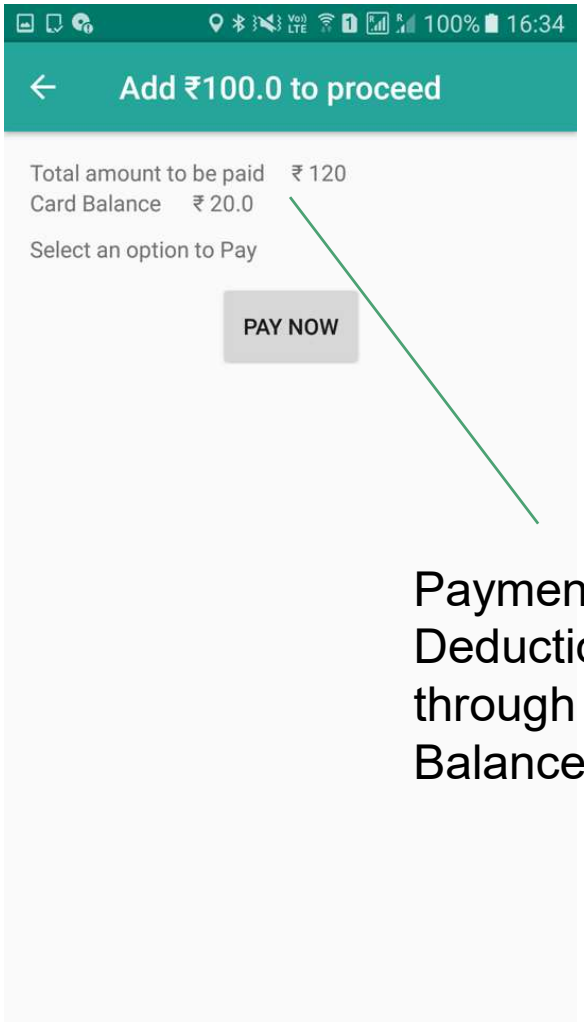


PAYMENT GATEWAY

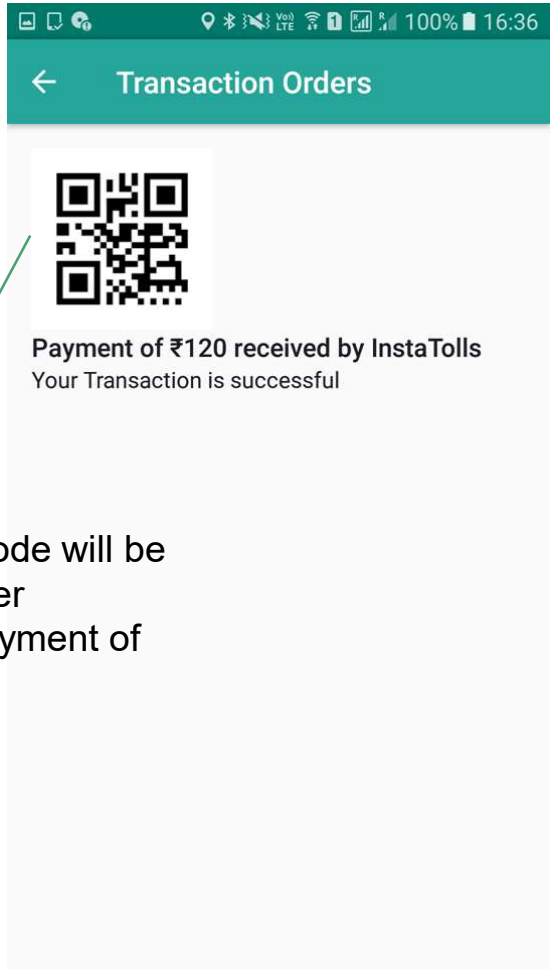
Simple Payment Gateway for payment through **card,netbanking,wallet and UPI.**

It will also **linked with our mobile number** and email id so that next time we **can pay from**
Saved cards.





Payment Deduction through card Balance

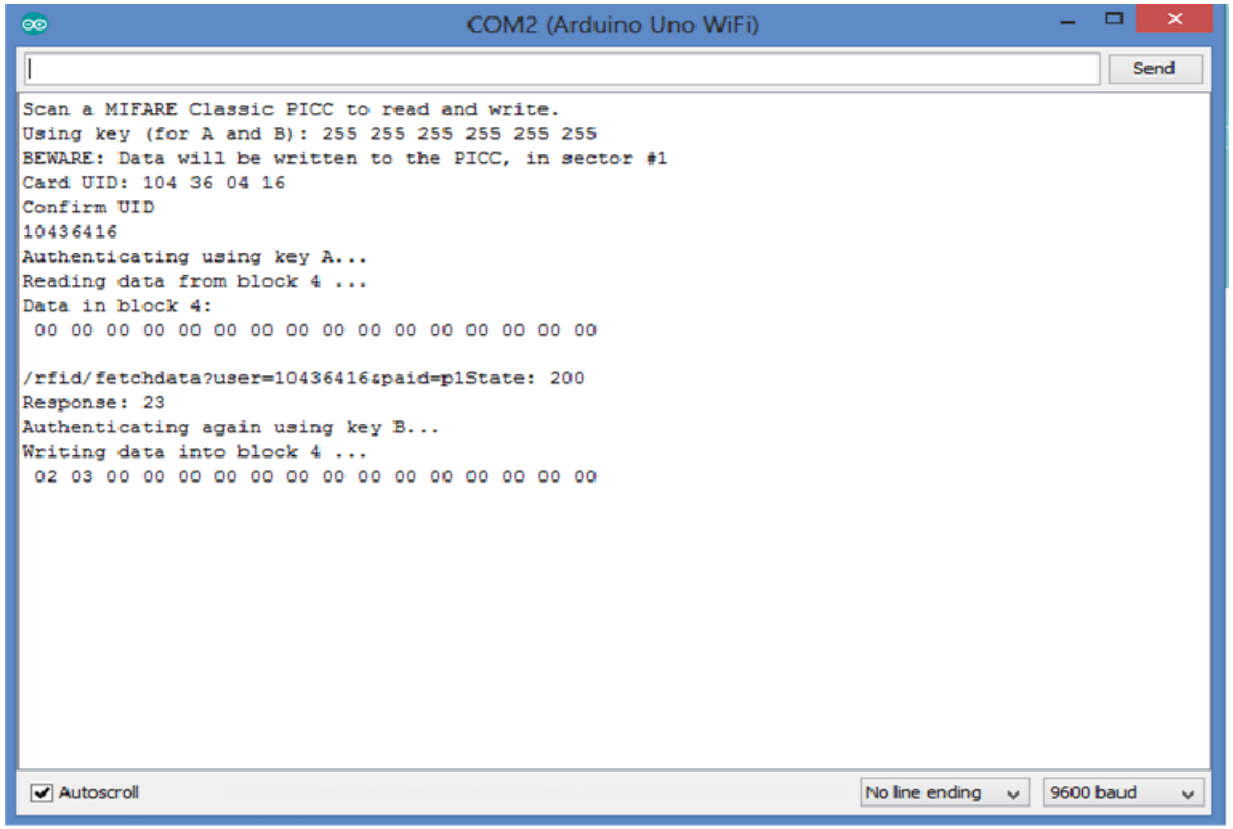


Simple QR Code will be generated after successful payment of Tolls.

RFID Mechanism

- When the user reaches toll , his RFID card is read by the reader at the toll plaza.
- If the user has not paid, he will be notified to pay. If paid, the ID of the user would be sent to the server.
- The server responds with the toll ID’s for which the user has paid and the time of entry.
- These details and then written on the RFID

Writing Data Into RFID



During low connectivity

If the user reaches a remote location with less internet connectivity, there is no problem as the RFID contains information of paid tolls.

If that particular toll is paid for, access is allowed.

REMOTE LOCATION TOLLS

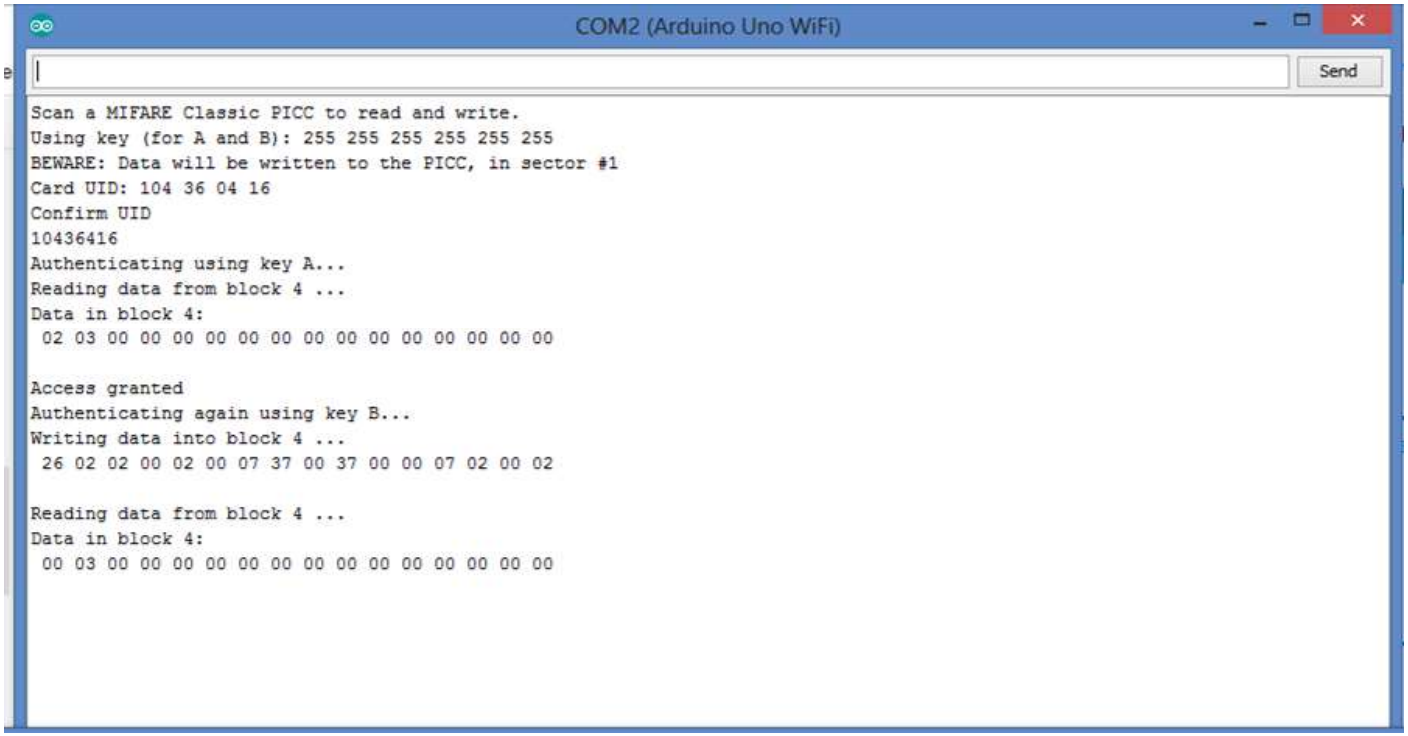
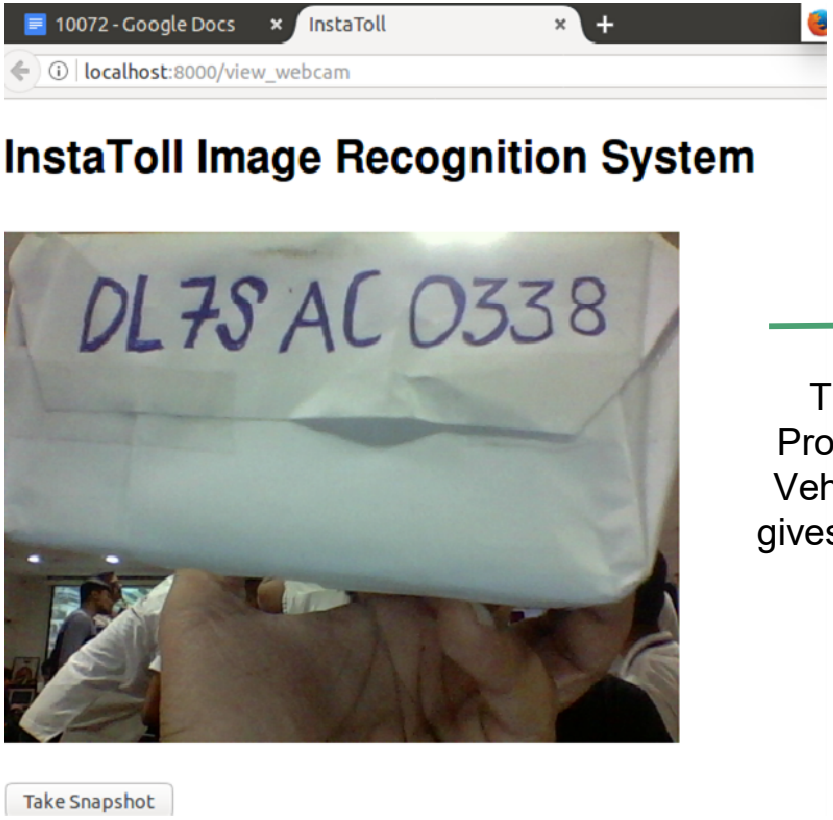
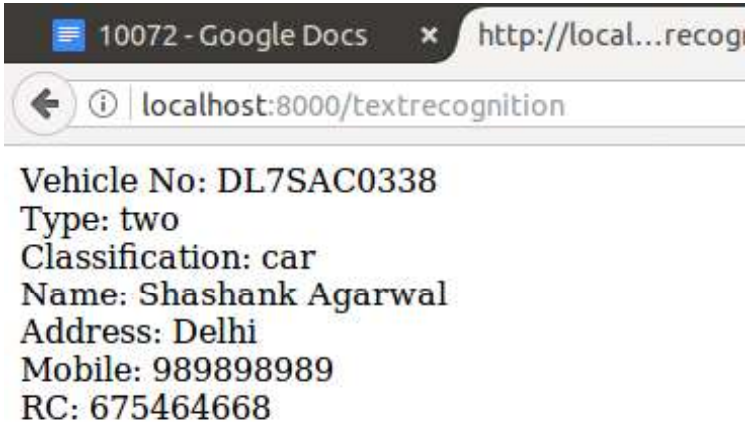


Image Processing



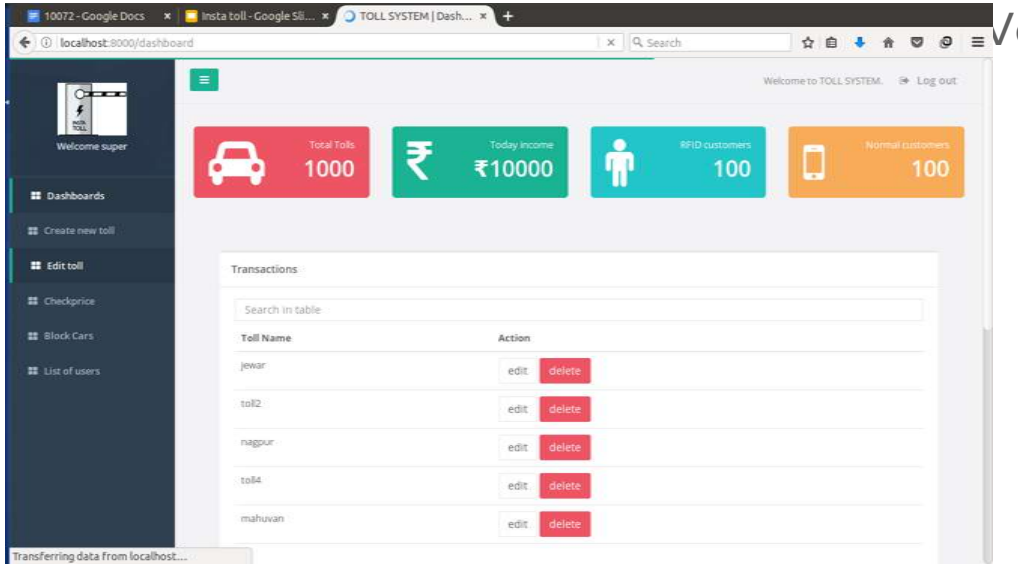
The Image is Processed to get Vehicle No which gives us RTO data.



Web App

Toll Admin : Manage Toll Fares and Payments

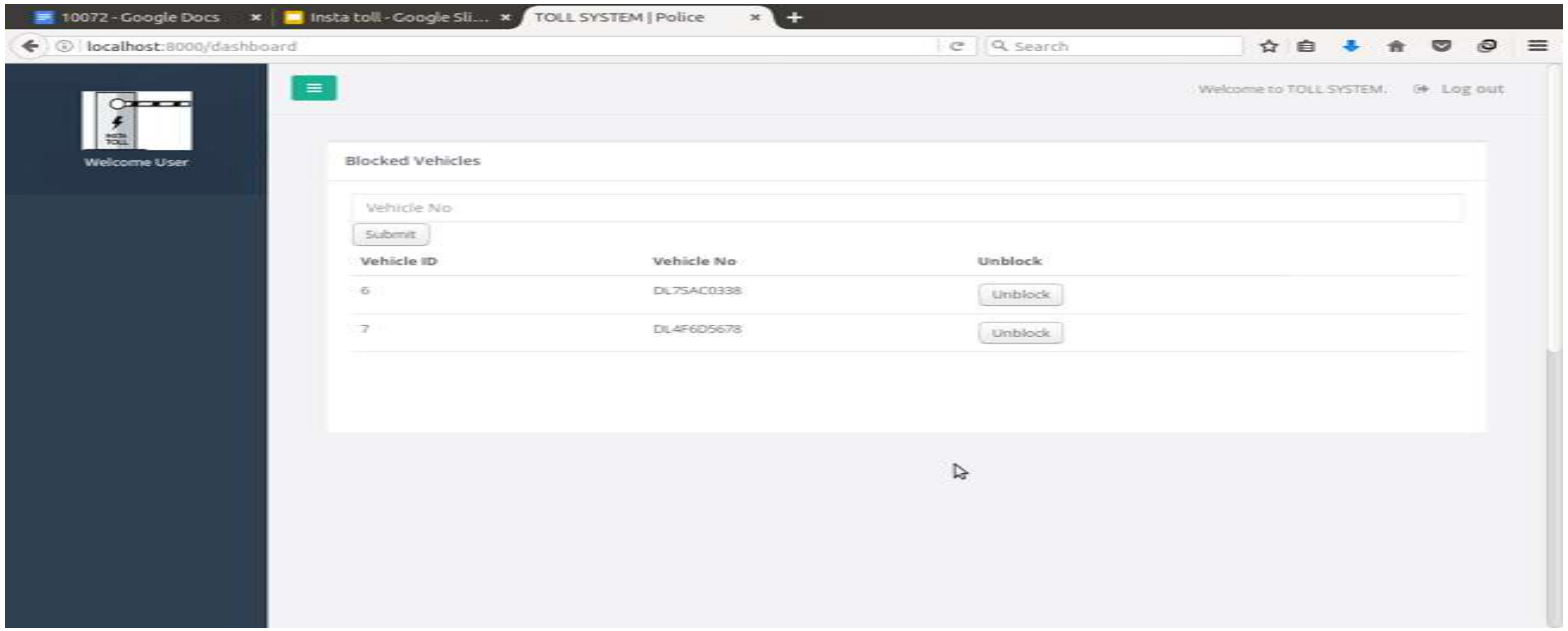
Super Admin : Superwise all Tolls



Vehicles

Super Admin Login Panel for Creating and Editing Tolls

Blocking and Unblocking



Police can Login and Block Vehicles

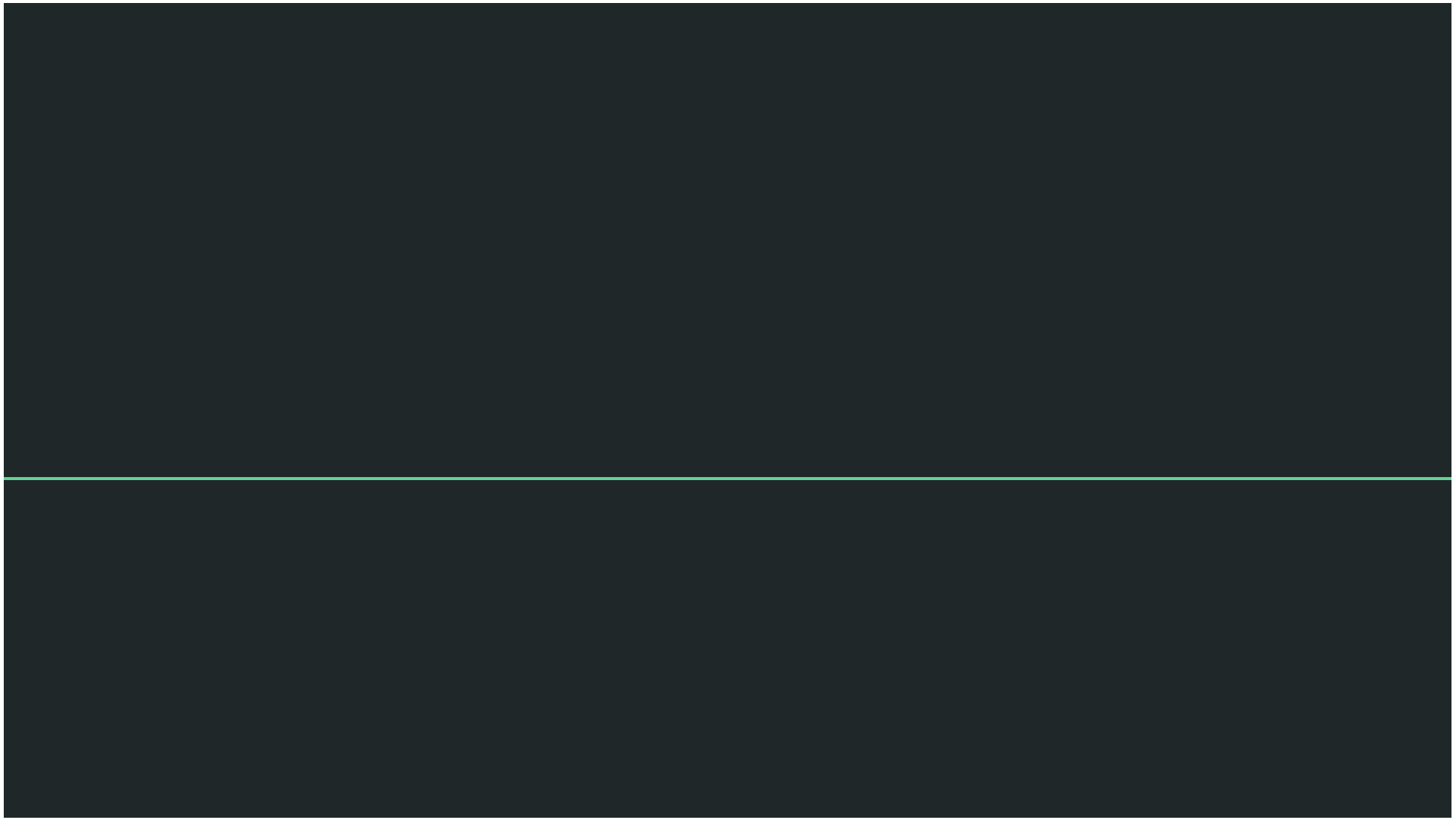
Technology used:

Laravel(Php framework)

Android Studio,Google Api client,Places API, Map API

Html,Css,Ajax

Razor Pay Payment Gateway,GeoFencing for Sending Notifications

MFRC 522 Reader /writer module

Arduino Uno wifi