

EToll : Instant Payment System



TEAM : TECHNOMINDS

From : Government Polytechnic , Pune

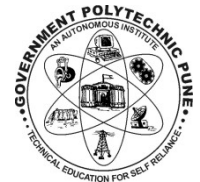
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MODULE 1 : Registration



Step 1 : User Downloads app from app store & Registers into the App E-Toll

- User Enters mailId as Login ID
- User must upload image of vehicle number plate

6:37 PM 0.09K/s 4G VoLTE 86%

Sign Up

Name

Email ID

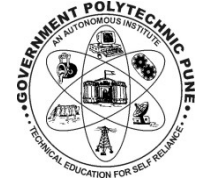
Mobile Number

Password

Confirm Password

NEXT

MODULE 2 : Login

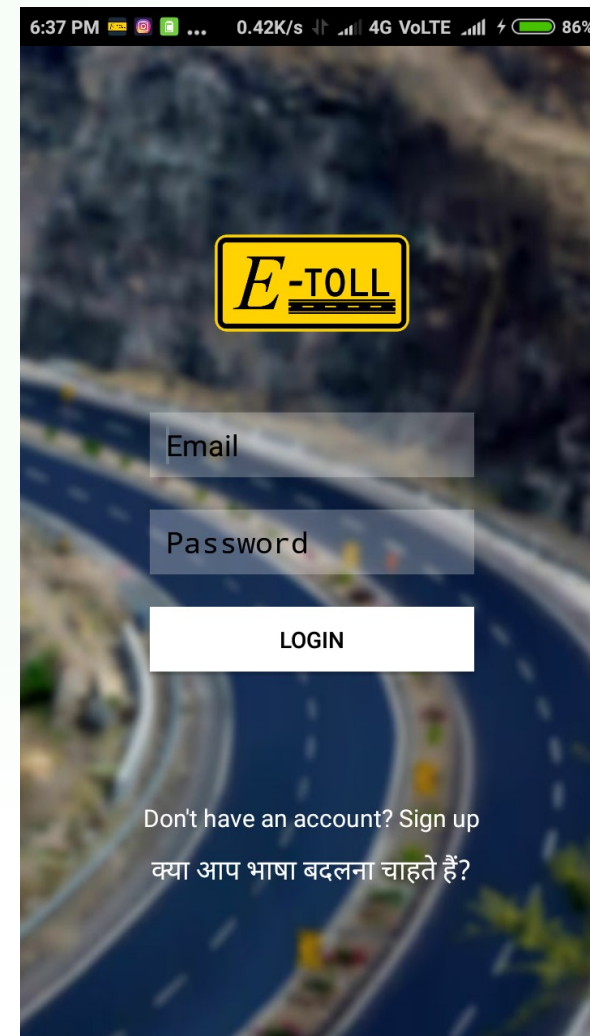


❑ Login to the App

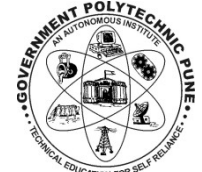
Using :

1. Email ID.
2. Password

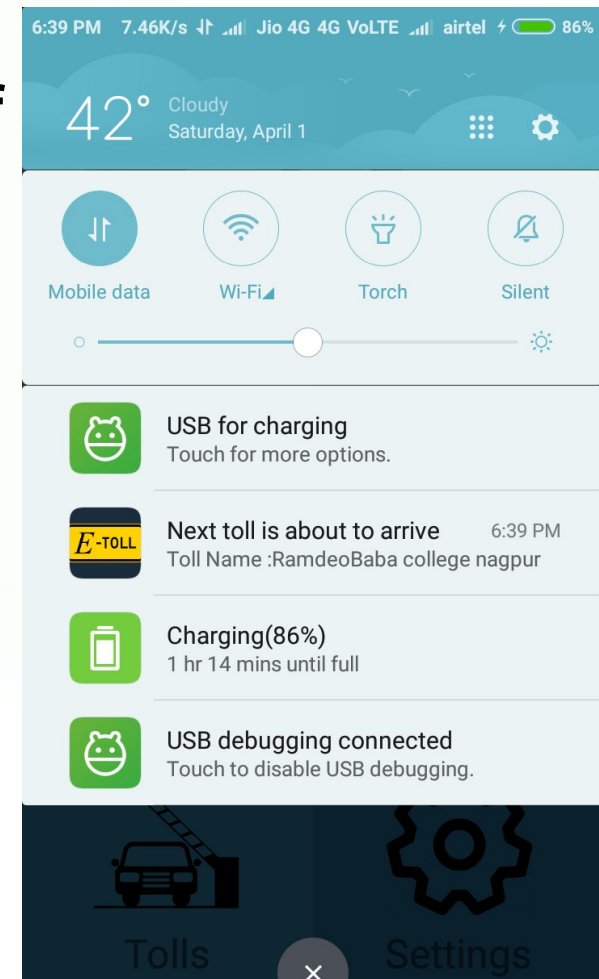
❑ Multilingual support (Hindi and English) provided.



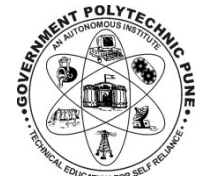
MODULE 3 : Sending Notifications



- ☐ User will get notifications preferably 2km before Toll plaza arrives.
(depends on decision at the time of implementation)
- ☐ Geofencing Technology Used .



MODULE 4 : User Dashboard



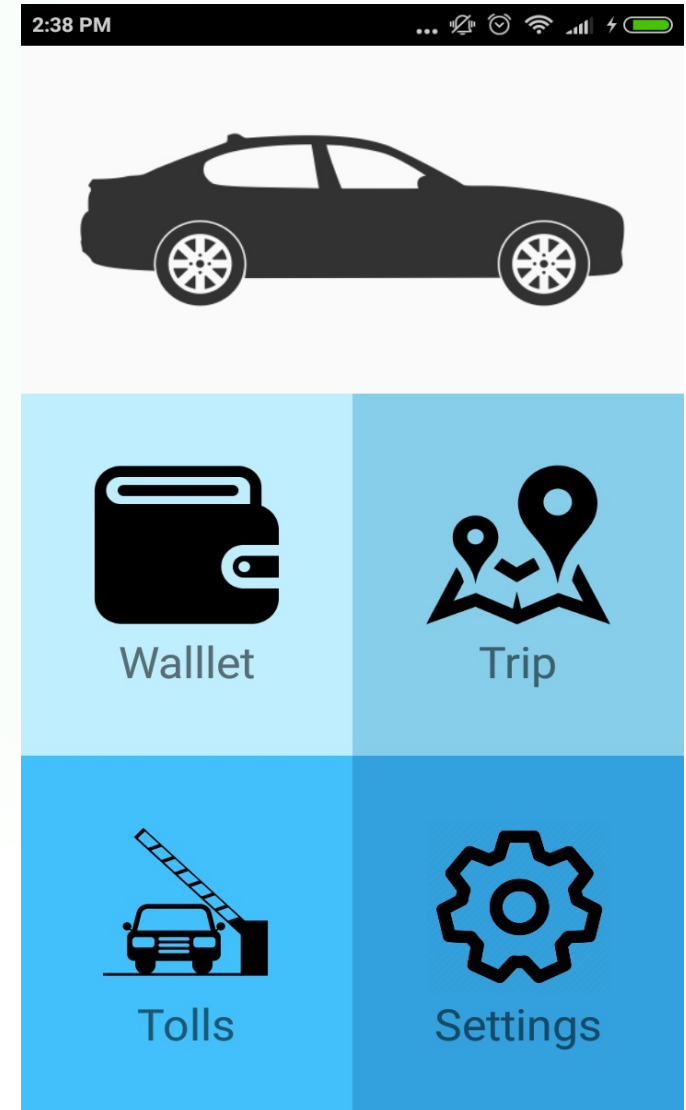
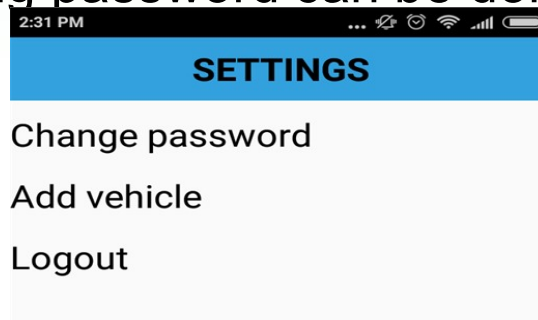
❑ Select one of the following option :

WALLET :

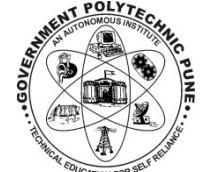
TRIP : Clicking on Trip, client needs to enter the source & destination to view all the tolls in that route..

TOLLS : Clicking on Tolls, all Tolls of a state are displayed.

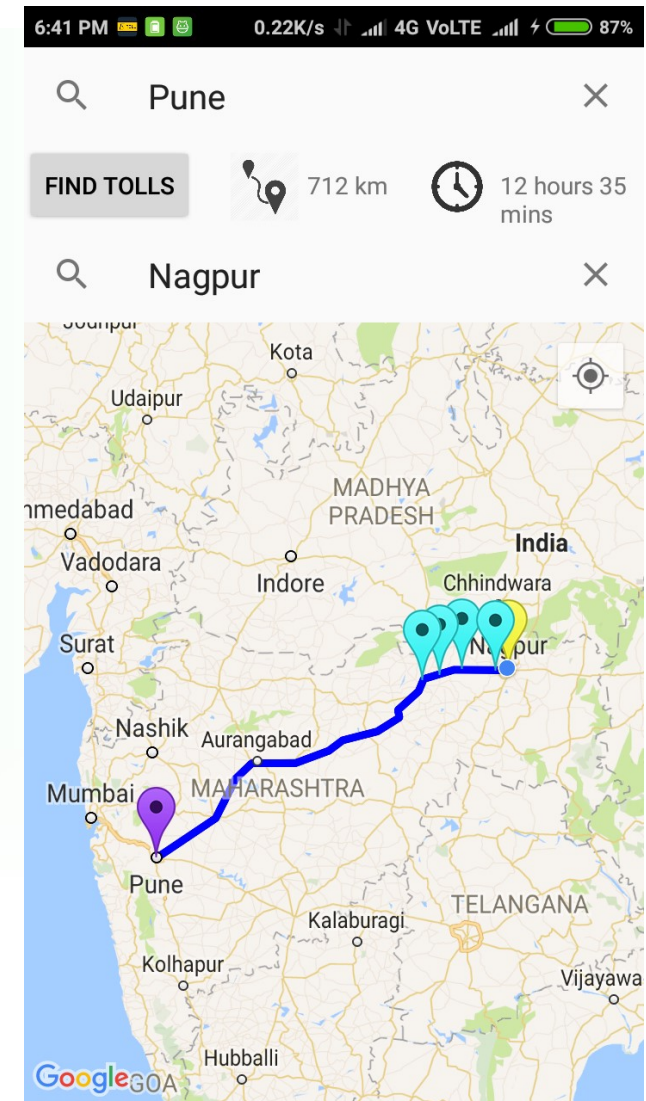
SETTINGS : Making changes to the profile like Adding Vehicle, editing password can be done from settings.



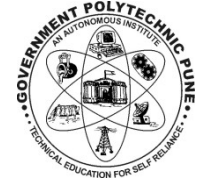
MODULE 5: Toll Info. of a route(Trip)



- ❑ Clicking on “Trip” option will display all the tolls from source to destination.
- ❑ Provision for combined toll payment or automatic fare deduction from wallet at every toll passing can be made.



MODULE 6 : Toll Payment

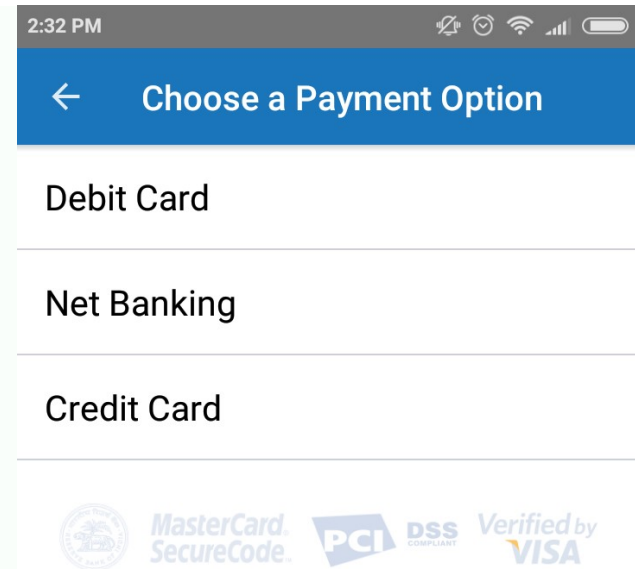


- ☐ Select the payment mode.(For Current upcoming toll)

Select option :

1. Wallet
2. Credit card
3. Debit card

- ☐ After payment, receipt & QR code is generated.



MODULE 7 : Barrier Opening



- ☐ At arrival, system captures the image of vehicle number plate.
- ☐ Matching of number plate image with pre-stored image.
OR
Matching of QR code(If number plate image is distorted).
- ☐ Barrier opens automatically.

Technology Used



- Android Application Development.
- Geofencing interface
- Google Maps
- Firebase database (Freeware)
- Raspberry pi (Hardware kit)
- Open CV(Image processing interfaces)
- Python Programming

Benefits



- 1.Reduce Congestion and Bottleneck at toll.
- 2.Help reduce pollution & reduce fuel consumption.
3. Time Saving because of unmanned lanes and thorough passage availability.
4. Collection transparency can be maintained which can be a big aid to government for crucial decision.

☐ Important fact :

No overheads on user

Cost Estimation based on following parameters :



- 1.Hiring cloud(SaaS/PaaS/IaaS).
- 2.Camera cost & installation cost.
- 3.Image processing circuit, cost & installation.
- 4.App development expert cost.
- 5.Recurring : maintenance cost.

Prerequisite module



Toll information filling –

- a. Basic information : Toll Master(with sanctioned proposal no. & date)
- b. Fare information(circular no. & date)
- c. Expiry information(circular no. & date)

Supplementary systems



- Unmanned lane indicators through LED displays.
- Providing fare collection data to government (integrating with government systems).

Revenue Models Which may be applied



1. Advertising model.
2. Freemium model.
3. Subscription model.
4. Sponsorship/Donation.