



Bike Fleet Management System

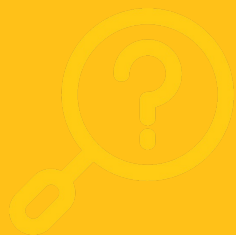
CASE STUDY

MANTRA LABS



India's No. 1 Bike Sharing Company is a Venture Capital backed micro-mobility solution that allows daily commuters to rent, ride & share bikes, for a hassle-free transit within congested cities — available via its **iOS & Android app**.


With over 8,500 bikes and 500 scooters, Yulu looks to **decongest urban traffic & air pollution** by providing a scalable, affordable and clean solution for the first mile, last mile and short distance commute.




Problem

Yulu required a flexible framework built for **quick scaling** — that can handle large volumes, as their platform grows increasingly popular — integration with a **real-time monitoring system**, while also providing dynamic ad-hoc **analytics & reporting**.


Key Challenges




Demand and prediction accuracy for inventory target-level determination.



Effective optimiser for vehicle routing with hundreds of stations, using meteorology forecast prediction and real-time location coordination.



Smartphone applications for iOS and android.



Instantaneous analytics & reporting dashboard.

Solutions

7 Integrated solutions enabling a **scalable**, and **easy-to-use** platform for users to access bike sharing services.



1

Regressor

Regression model to predict station pickup demand based on historical data.

2

Data Exchange Hub

Streamlined complex data integration environment facilitating Fleet Telematics using sensors, IoT.

3

Fleet Management Software

Real-time bike location monitoring, Re-balancing of bikes based on supply & demand prediction, Defect & maintenance management.

4

CRM Integration

Quick data analysis & insights about customer's history, support lifecycle, retention and profitability outcomes.

5

Billing Management System

Flexible architecture that supports dynamic pricing, clean & accurate invoicing, user-friendly account management, reduces bottlenecks and speeds up billing operations.

6

Mobile Apps

Integrated mobility apps for customer and fleet management built using Swift, React, Java.

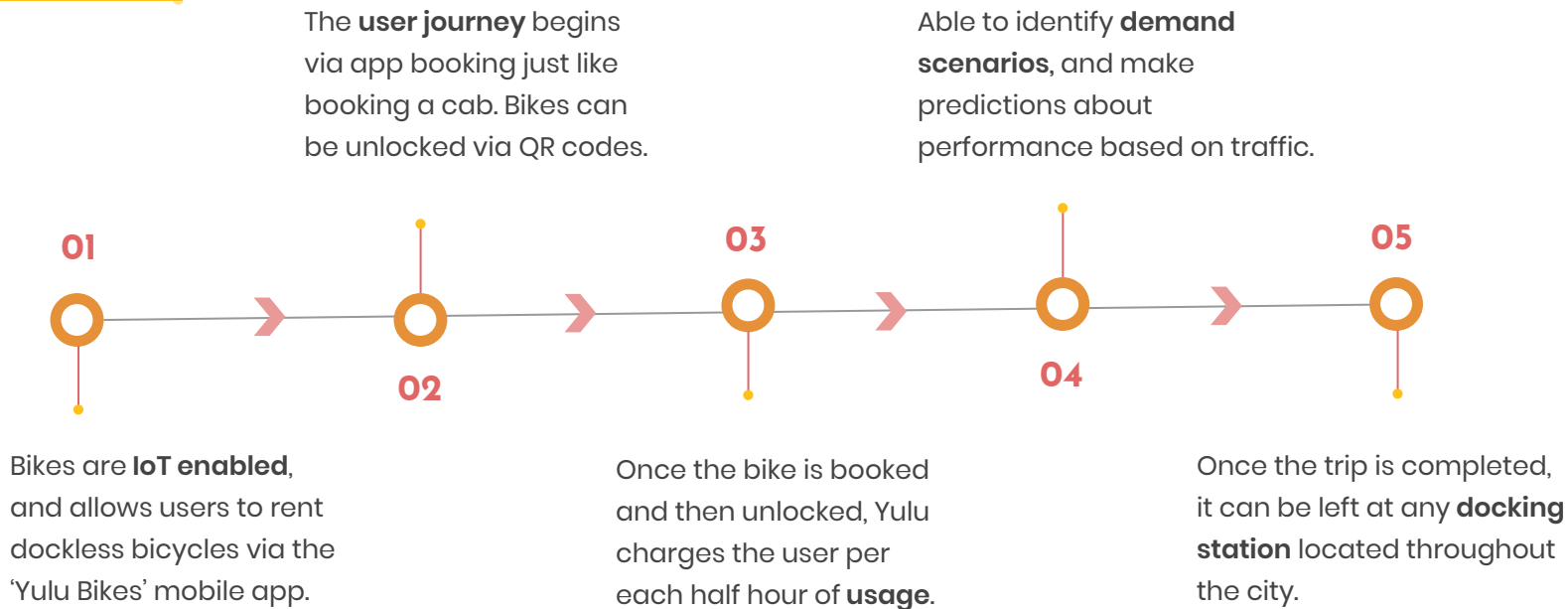
7

Advanced Analytics Dashboard

Real-time and unified view reporting dashboard built as an event-driven Node JS application.



How We Made Yulu Work





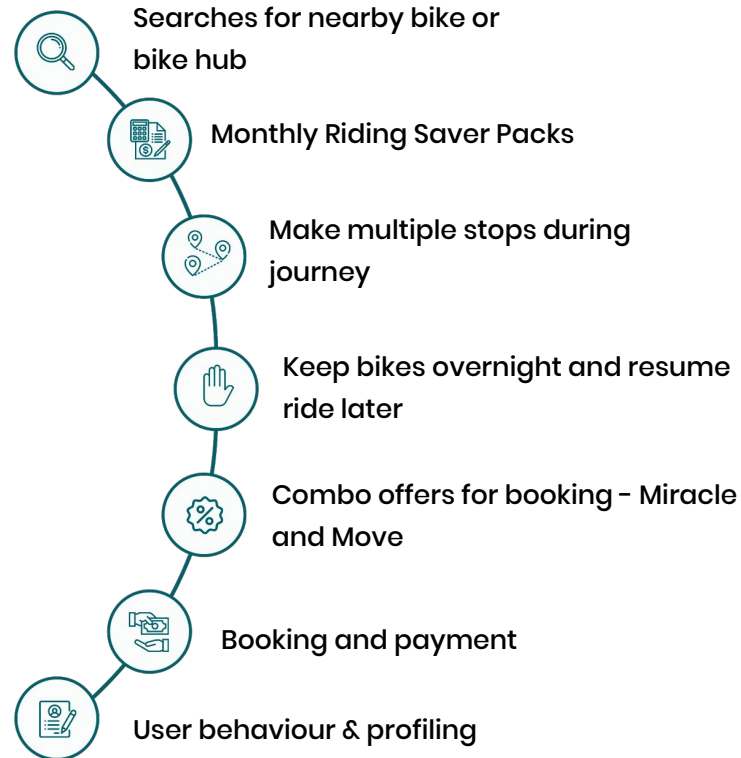
CUSTOMER MOBILITY APP

An integrated urban **mobility app** to book & track trips, monitor bike health, report bike issues, check personal stats, and win rewards.

The **app** allows users to view personal health stats such as calories burnt, distance covered and time elapsed for quick tracking.

It also indicates the amount of **carbon emissions** saved for each trip.

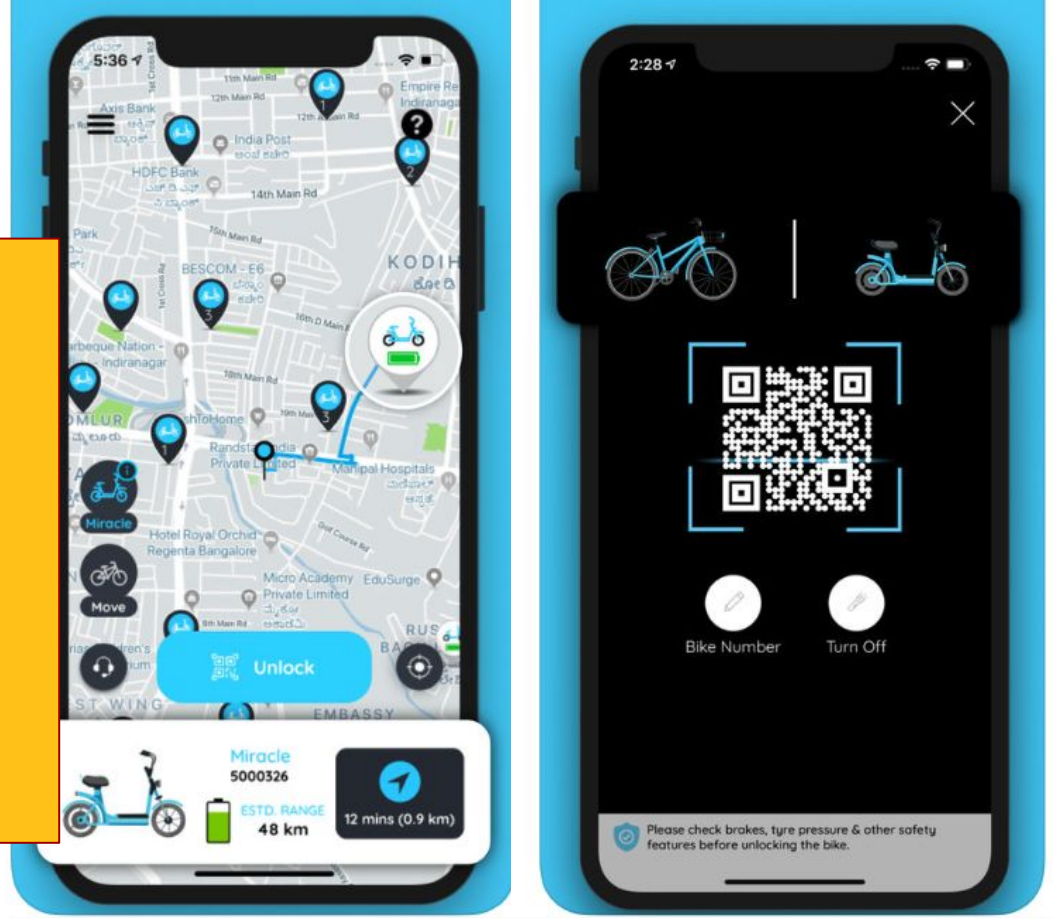
KEY FEATURES



CUSTOMER APP JOURNEY

After installing the app, a user can locate the nearest 'Yulu zone' on the map, and see a list of available bikes nearby.

To **begin the ride**, unlock the e-Bike by scanning the QR code.

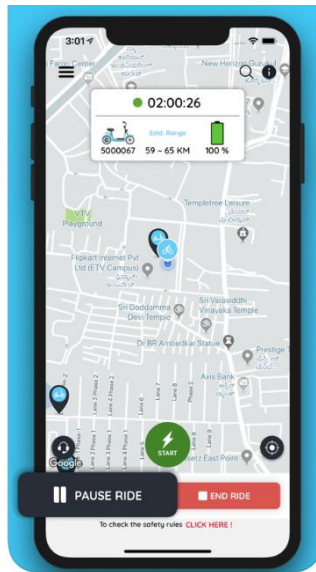




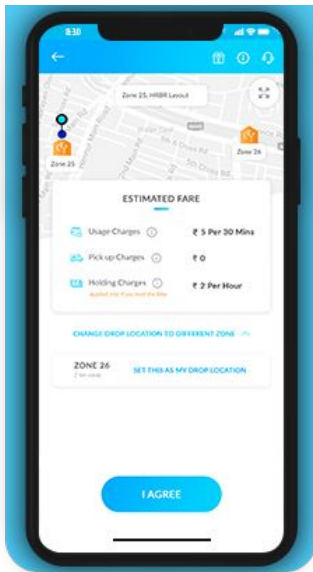
CUSTOMER APP JOURNEY

Once the e-Bike is **unlocked**, a user can access a variety of features.

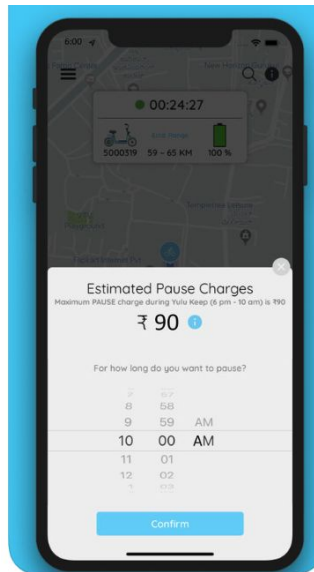
Make Multiple Stops while Riding



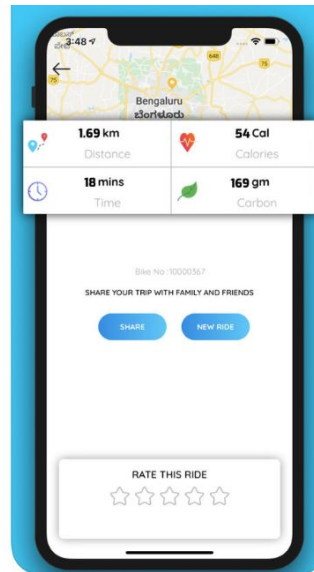
Get Fare Estimation



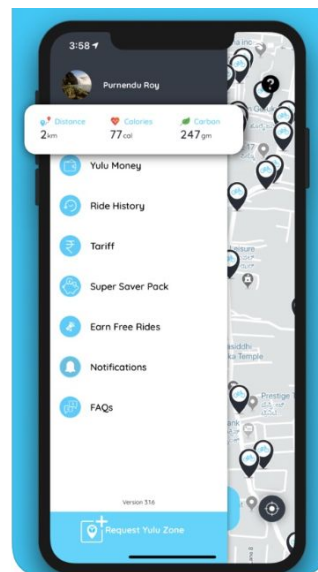
Pause ride and keep the bike overnight



Monitor Carbon Footprint



Track your ride stats





Key Results

CUSTOMER MOBILITY APP PERFORMANCE



4.7 ★

Avg. User Rating

#24

In Travel

1M+

Installs

+500k

Unique Users

New Users in 2018-19

2 hours+

Fleet Productivity

Average Vehicle Activity

8k+

Total Fleet Strength

Number of Bikes Integrated

+45.9%

Expected Growth

New Users added each Month

99.49%

Driver Safety

Daily Crash-free usage

98.7%

Demand Forecasting Rate

Predicting Rebalancing Needs

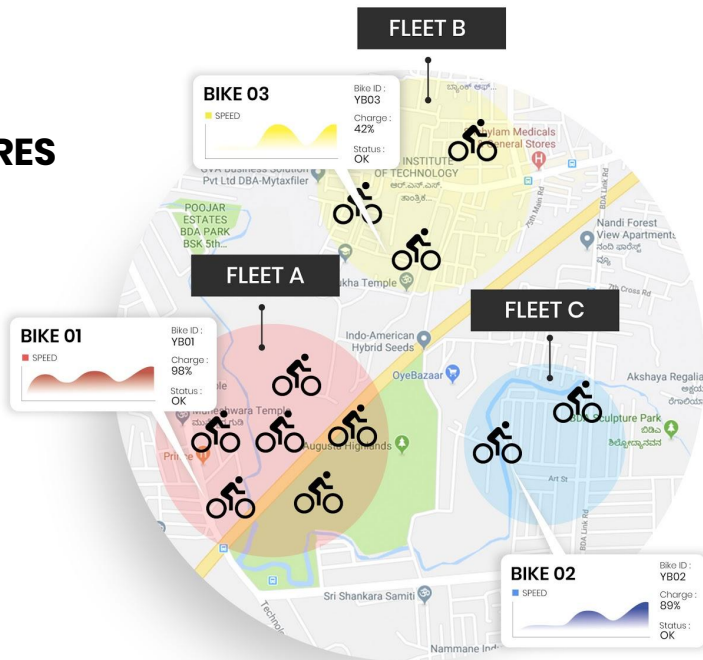


FLEET MANAGEMENT APP

CUSTOMIZED CLOUD FRAMEWORK

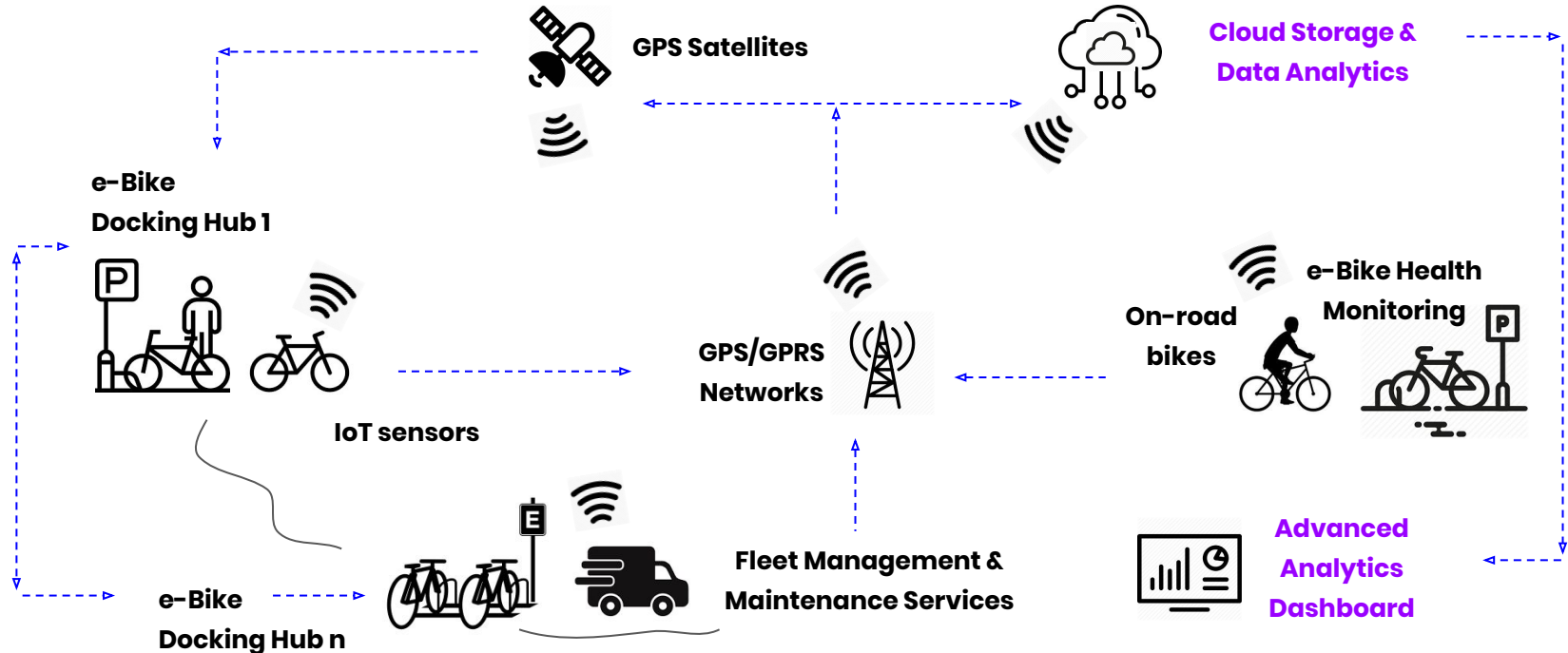
A Solution to identify spatial distribution of electric bikes distributed across the city, using demand-based prediction and real-time performance data.

KEY FEATURES



FLEET MANAGEMENT ARCHITECTURE

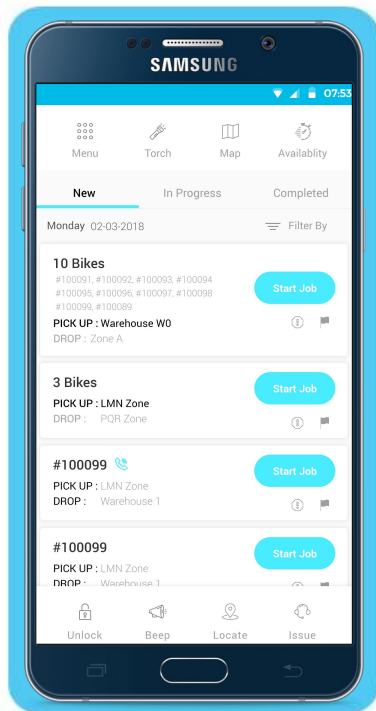
The **Solution** enables Yulu to scale its bike performance monitoring capabilities. With **analytics**, Yulu can predict maintenance requirements and better manage service supply chains.



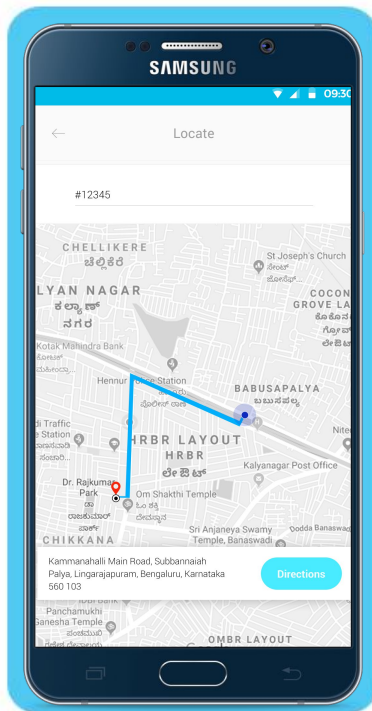
Fleet Management App Journey



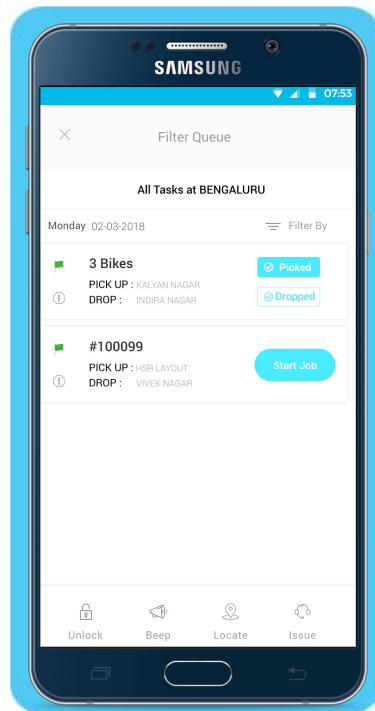
Assign Daily
Tasks



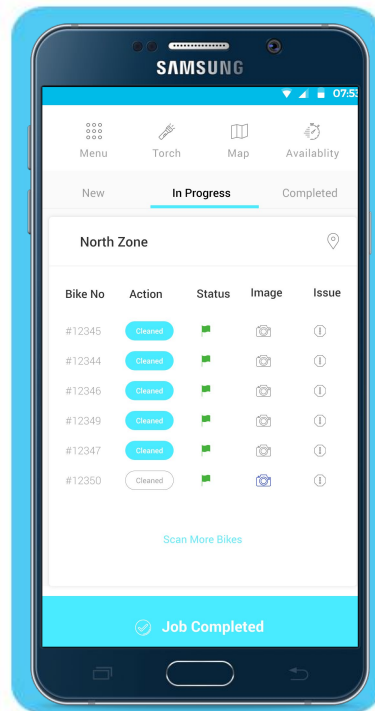
View Tasks By
Location



Coordinate Same
Area Pickups



View Status of 'In
Progress' Tasks



Fleet Management App Journey

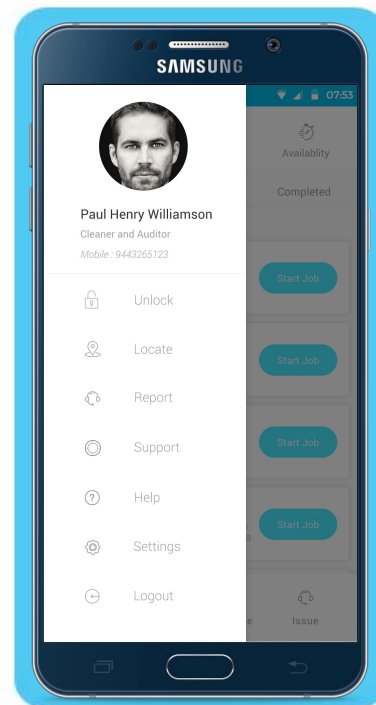
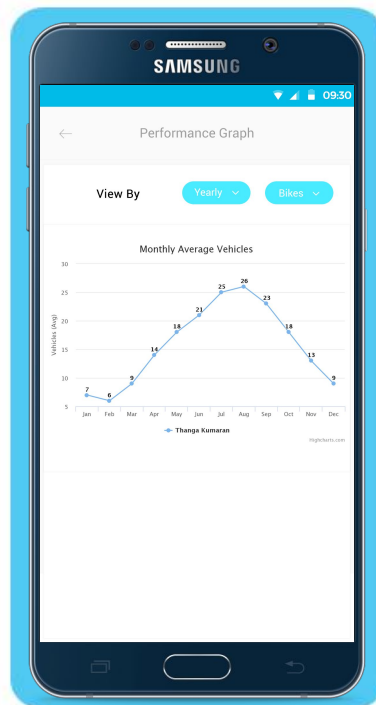
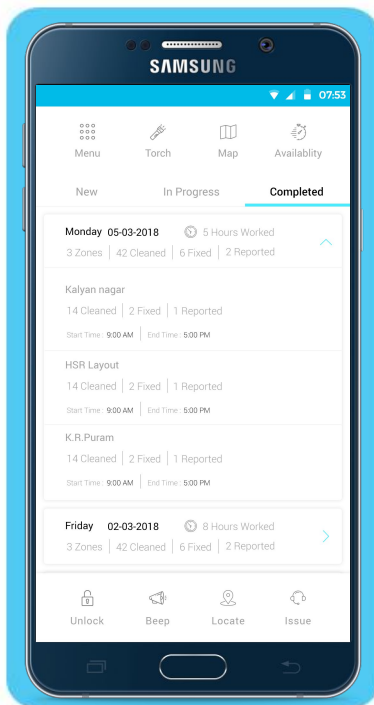
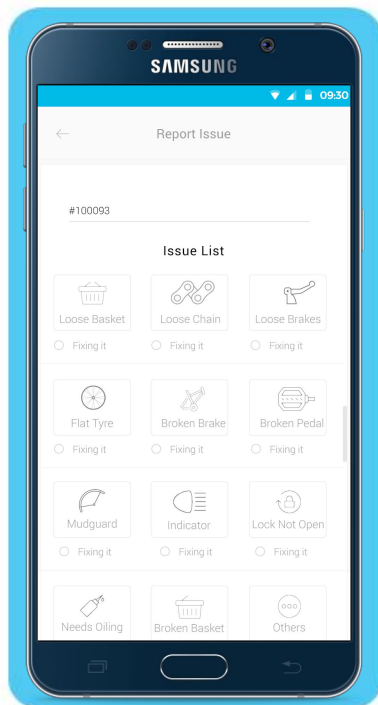


Bike Safety Issues
Quick Resolution

View History of
Completed Tasks

Work Performance
Graph

User Behavior &
Profiling





About Us

- ◆ Domain Focused Products and Solutions for the Digital Insurer
- ◆ Real World Problem Solving using Artificial Intelligence and Customer Experience Consulting

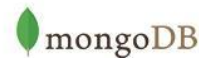


100+
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150+
GEEKS

03
OFFICES

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