Team # 5

Mobile and Ubiquitous Computing

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TABLE OF CONTENTS

Introduction

No.1	Mexico City	59%
No.2	Bangkok	57%
No.3	Istanbul	50%
No.4	Rio de Janeiro	47%
No.5	Moscow	44%
No.6	Bucharest	43%
No.7	Salvador	43%
No.8	Recife	43%
No.9	Chengdu	41%
No.10	Los Angeles	41%

Ranking of the most congested cities globally

Source : https://www.nec.com/en/global/insights/report/2020022504/index.html

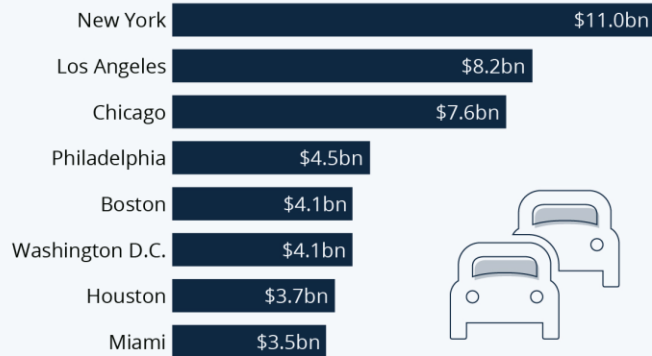Traffic jam is one of the most impacting causes of co2 emissions in the world

Introduction

Source : https://www.10news.com/news/local-news/chase-ends-in-four-car-crash-in-spring-valley

Vehicle congestion is one of the most recurrent causes of accidents

Introduction

Congestion Costs U.S. Cities Billions Every Year

Average annual economic losses from traffic congestion in U.S. cities

City	Loss
New York	$11.0bn
Los Angeles	$8.2bn
Chicago	$7.6bn
Philadelphia	$4.5bn
Boston	$4.1bn
Washington D.C.	$4.1bn
Houston	$3.7bn
Miami	$3.5bn

Source: INRIX

statista

Traffic jam has a negative impact in the economy efficiency.

Target users

- ❖ Countries with lack of transit and transportation cutting edge technology.

- ❖ Especially for developing economies

- ❖ Countries which are interested in a first approach to smart transportation system but with low budgets.

- ❖ End-users will be those who install the app and register in the platform with the aim of reporting traffic violations
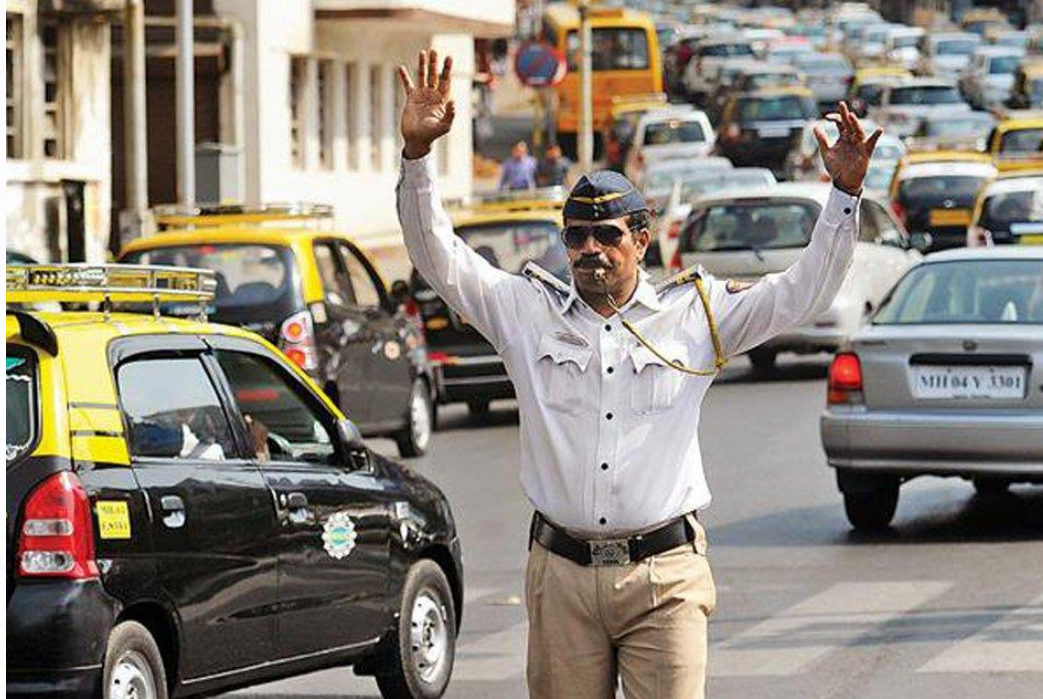
Problem statement

Source : https://en.vietnamplus.vn/indonesia-loses-47-bln-usd-each-year-to-traffic-jams/144888.vnp

Wrong drivers use of the transit and transportation infrastructure(roads, highways......)

Problem statement

Source : https://thelogicalindian.com/news/no-more-cash-transactions-with-the-mumbai-traffic-police/

Developing countries doesn't have automated ubiquitous reporting system

Problem statement

https://www.wvdispatch.com/2020/06/warwick-town-hall-open-to-the-public/

Governments doesn't have the financial funds for investing in a large infra for improving traffic.
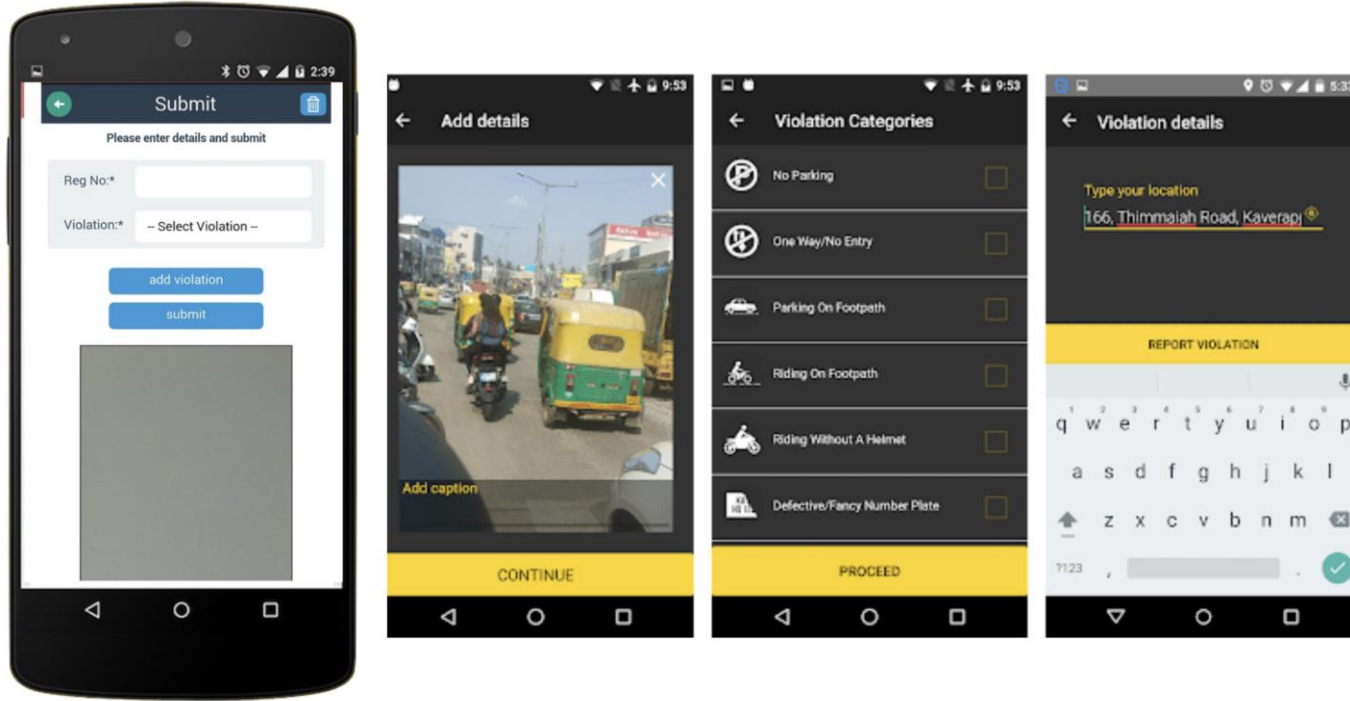
Motivation

Provide an accessible and affordable, mobile-based-ubiquitous application for governments with low infrastructure that report violations of transit rules and laws in cities in real time.
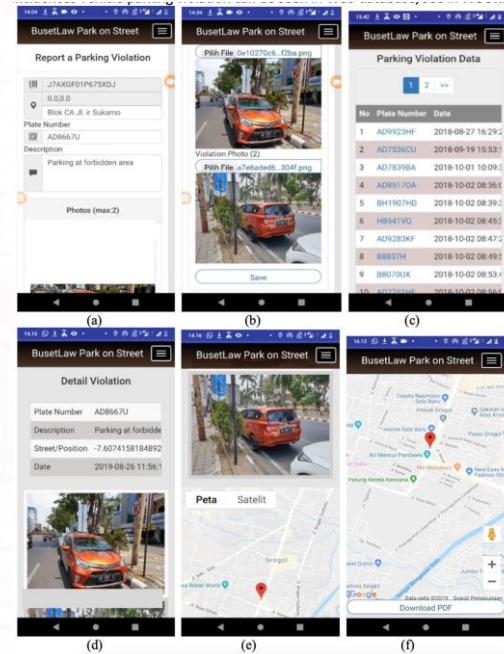
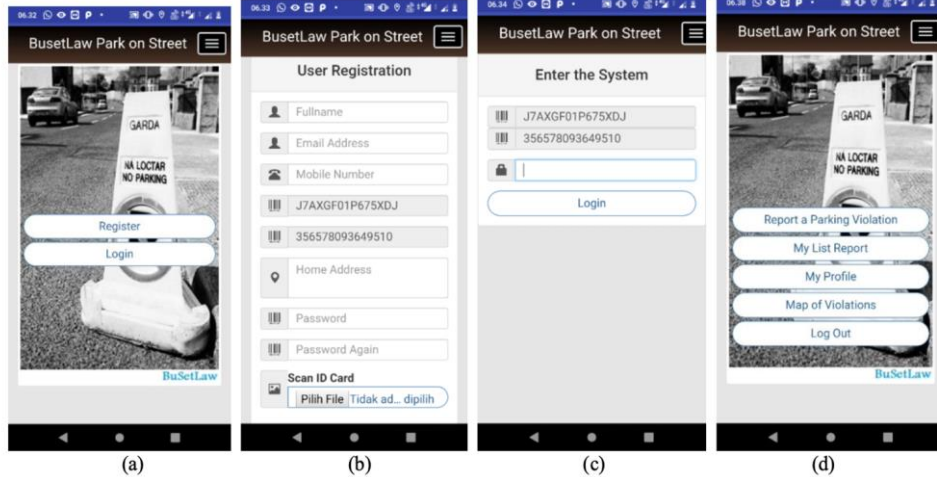# Existing solutions and their limitations

Emergency call - SMS

Existing solutions and their limitations

Public Eye: Manual data input for plates and violations

Existing solutions and their limitations

Manual data input for plates and violations

The key solutions idea to tackle the problem

- ❑ Image recognition (OCR) for plate number identification

- ❑ Object recognition (optional)

- ❑ Blockchain (optional)

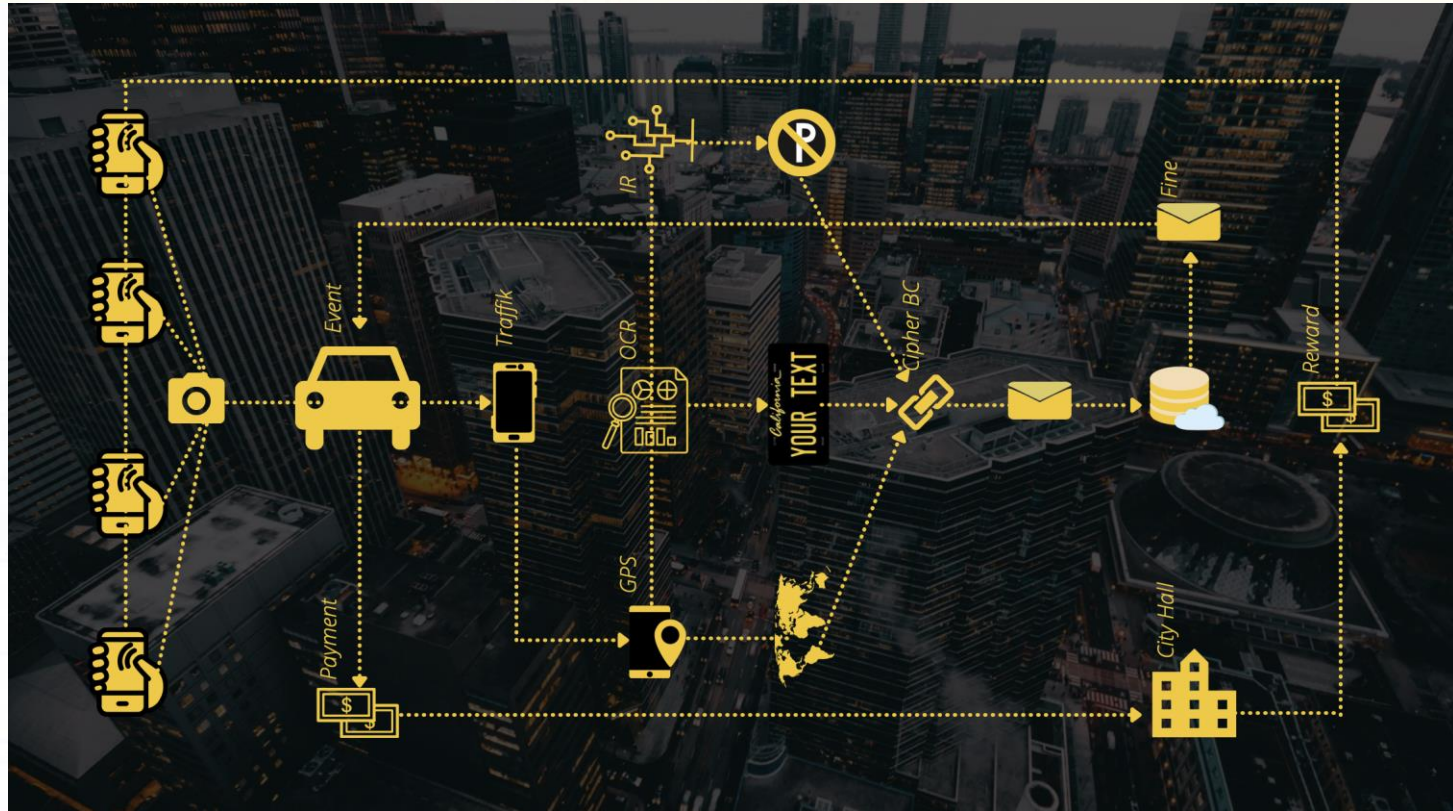- ❑ Cloud technology

- ❑ Eco-friendly

TRAFFIK APP

By Team YoHeSa

Soon...

Available on the iPhone App Store

GET IT ON Google Play

System Overview

Expected (technical) challenges and solution ideas

- ❑ Lack of technical skill
  - ❑ Image recognition
  - ❑ Object recognition
  - ❑ Blockchain
- ❑ Research and peer Knowledge exchange

Evaluation strategy

- ❏ Accuracy of OCR
- ❏ Accuracy of GPS
- ❏ Accuracy of blockchain encryption
- ❏ User feedback through survey

Overall project plan

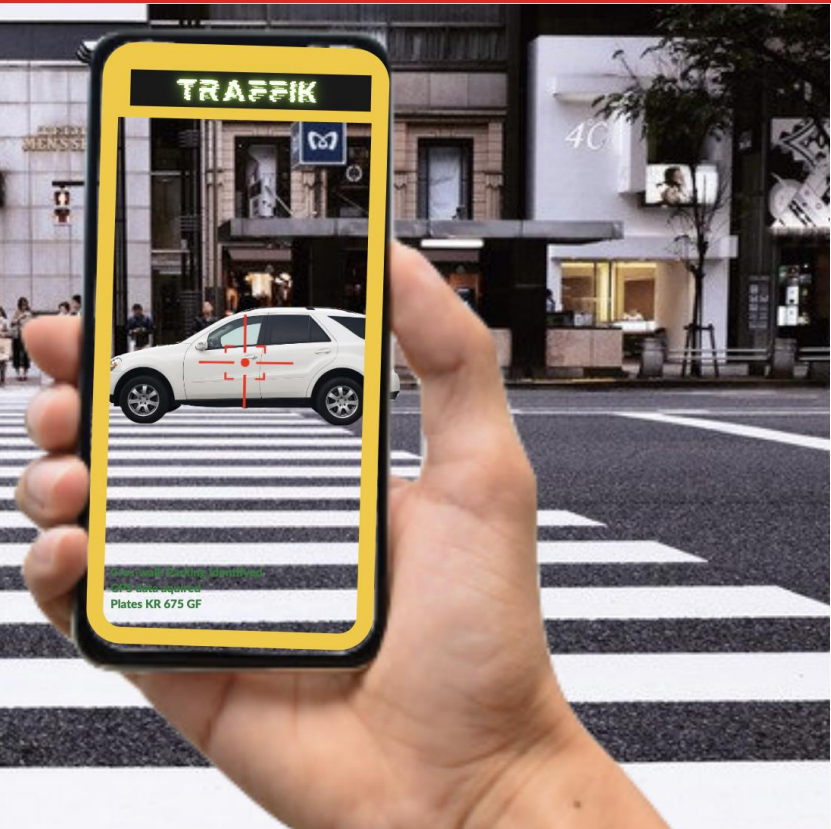| Task	22/3-28/3 Week-4	29/3-04/4 Week-5	05/4-11/4 Week-6	12/4-18/4 Week-7	19/4-25/4 Week-8	26/4-2/5 Week-9	3/5-9/5 Week-10	10/5-16/5 Week-11	17/5-23/5 Week-12	24/5-30/5 Week-13	31/5-6/6 Week-14	07/6-13/6 Week-15	Assign To
Setup and configuration tools	■												Y,H,S
Mockup design	■	■											Y,H,S
UX-UI Design			■										Y,H,S
Database Design (Cloud)			■	■									Y,H,S
User Registeration					■								Y,H,S
Map Labeling					■	■							Y,H,S
Setup content generation						■	■						Y,H,S
Mid-term Presentation							■						Y,H,S
Report generation								■					Y,H,S
Reporting Form								■					Y,H,S
ORC									■	■	■		Y,H,S
Image recognition									■	■	■		Y,H,S
Blockchian									■	■	■		Y,H,S
Final Presentation												■	

Note :
Y -> Yodit
H -> Heiner
S -> Saly

Final deliverable and success criteria

Mobile application with the following **core functionality**

- Photo-Video traffic reporting system

- GPS tag

- Cloud storage

- OCR (if we are lucky enough)

- Blockchain (if we are lucky enough)