# MICROSOFT CODE FOR THE FUTURE HACKATHON 2020

TEAM: TECHNO PANDITS

MEMBERS:

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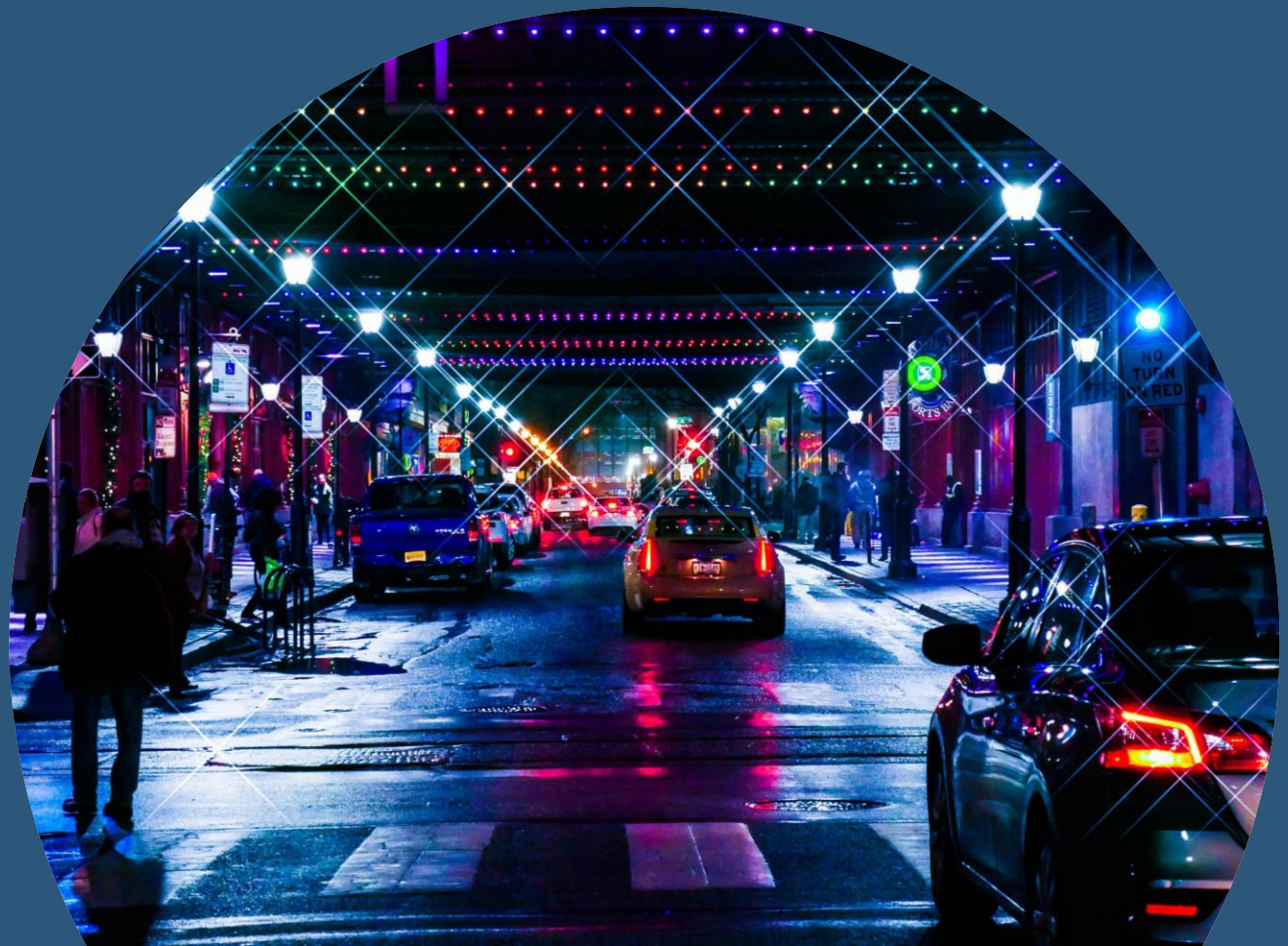
# PROBLEM STATEMENT:

## Smart Traffic Management System for Quick Commute and Carbon Reduction



# THE PROBLEM:

Traffic congestion is rising in cities around the world. Contributing factors include expanding urban population, aging infrastructure, inefficient and uncoordinated traffic signal timing and a lack of real-time data.

Advanced traffic management technologies such as adaptive traffic control and traffic analytics can improve safety and significantly decrease traffic congestion levels and greenhouse gas (GHG) emissions.

Create a solution for smart cities with mature traffic management.

# OUR MOTIVATION:

1. According to researchers **Signal Timer** (inadequate green time as well as out of sync timers) is in the top 3 causing factor of traffic congestion along with too many cars and road work/accidents.
2. Here we are trying to tackle the first cause of traffic congestion – Signal Timer Issue.
3. We are going to do this by setting the signal timer duration proportional to its respective road traffic density.

   Eg- On a 4-way crossroad, if one of the roads has a greater traffic density, then, the signal wait time will be proportionally lower.

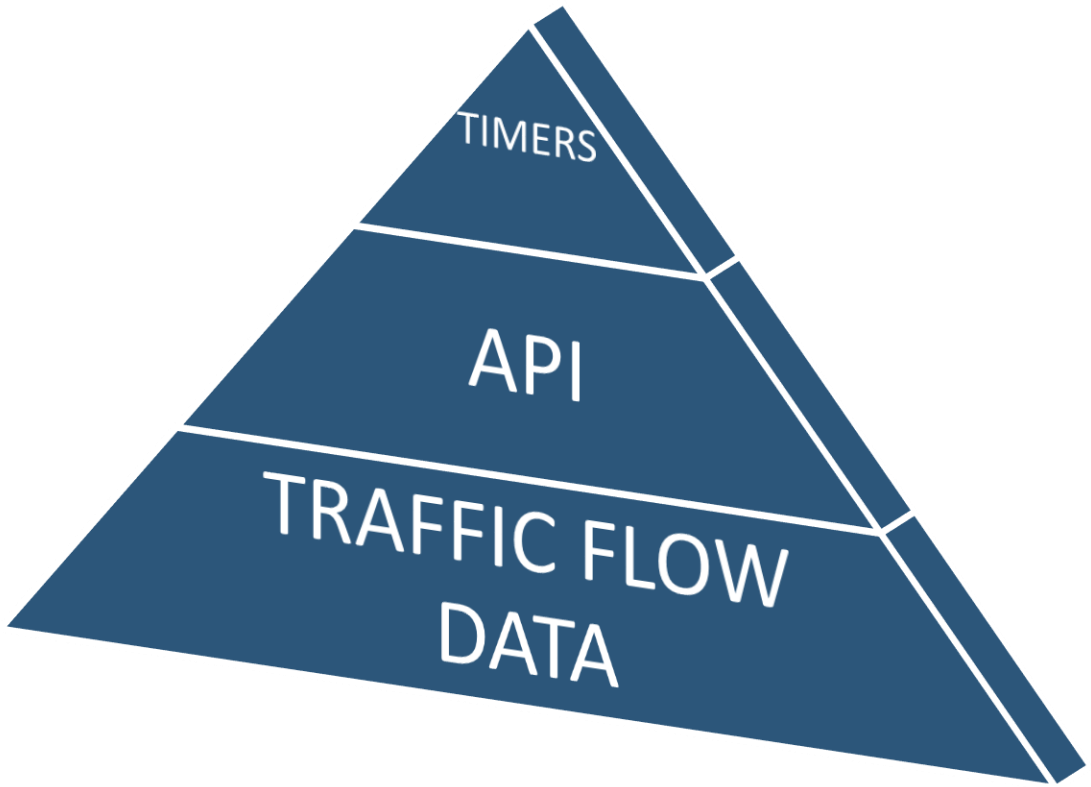
# SIMILAR SOLUTIONS

| SOLUTIONS | SHORTCOMINGS |
| --- | --- |
| 1. Using Sensors | 1.1. Hardware Parts lead to Maintenance Issues<br>1.2. Weather condition is a contributing factor to the accuracy of the solution.<br>1.3. Considering the development of roads, relocation of the sensors from one spot to other is not feasible. |
| 2. Using Camera | 2.1. Weather conditions affect the ability of the camera to calculate the traffic density accurately.<br>2.2. Maintenance of the cameras is not feasible.<br>2.3. Incase of curvy roads, (instead of straight roads), multiple cameras need to be set as a single camera cant find the traffic density accurately. |

# OUR SOLUTION

## HIGH LEVEL SOLUTION

**USING API**




## DIFFERENTIATORS

1. Works on the principle of EQUITY rather than EQUALITY
2. Real-Time Solution
3. Addresses All Ranges of Traffic Densities
4. Low Maintenance Cost
5. High Accuracy and Consistency
6. Does Not Depend on any External Factors like Weather, Road Construction, Human Intervention, etc.

## AZURE MAPS API

- ACCURATE DATA
- REAL TIME FEED

## DESIGN ALGORITHM

- EQUITY OVER EQUALITY
- DYNAMIC


INCLUDING PEDESTRIAN TIMERS
POTENTIAL IMPROVEMENTS
INTEGRATING WITH OTHER TRAFFIC SOLUTIONS
FETCHING OPTIMAL COORDINATES

Life is learning how to deal with traffic. It requires patience, a good sense of timing, and sometimes not giving in to the traffic but reshaping your life.
-Frederick Lenz

# THANK YOU!

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