

Smart Transportation

DREAM Team [Team 19]

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The high level idea

With smart transportation via IoT connected transportation assets you can:

Send alerts to drivers and emergency responders:

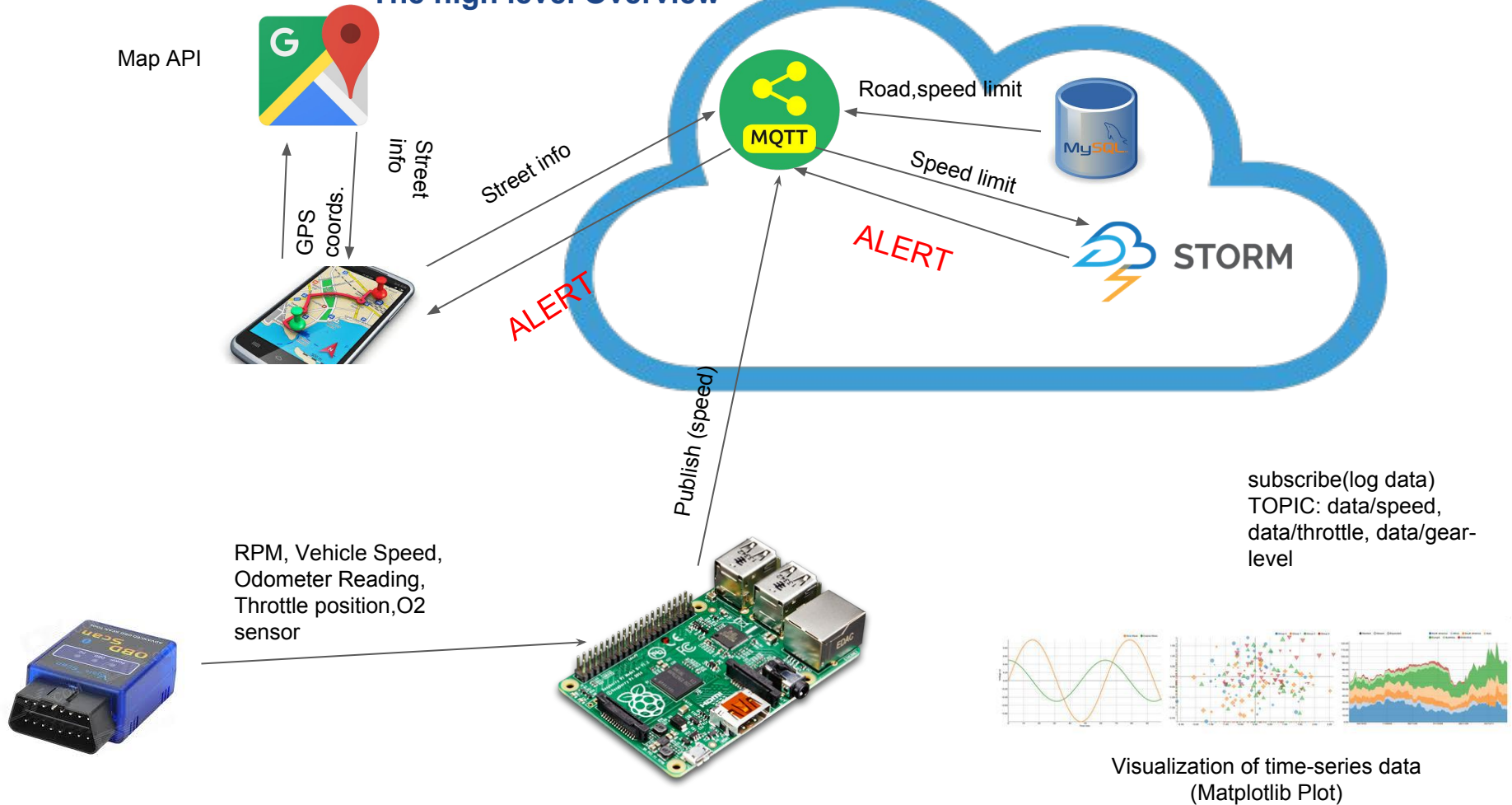
If speed of vehicle crosses a certain speed limit trigger Camera to capture snap of the street view in an interval of 2 secs. Send an Alert to subscribed authority using MQTT broker at Azure Cloud.

Smart detector to detect accident and send emergency alert to MQTT broker at Azure Cloud.

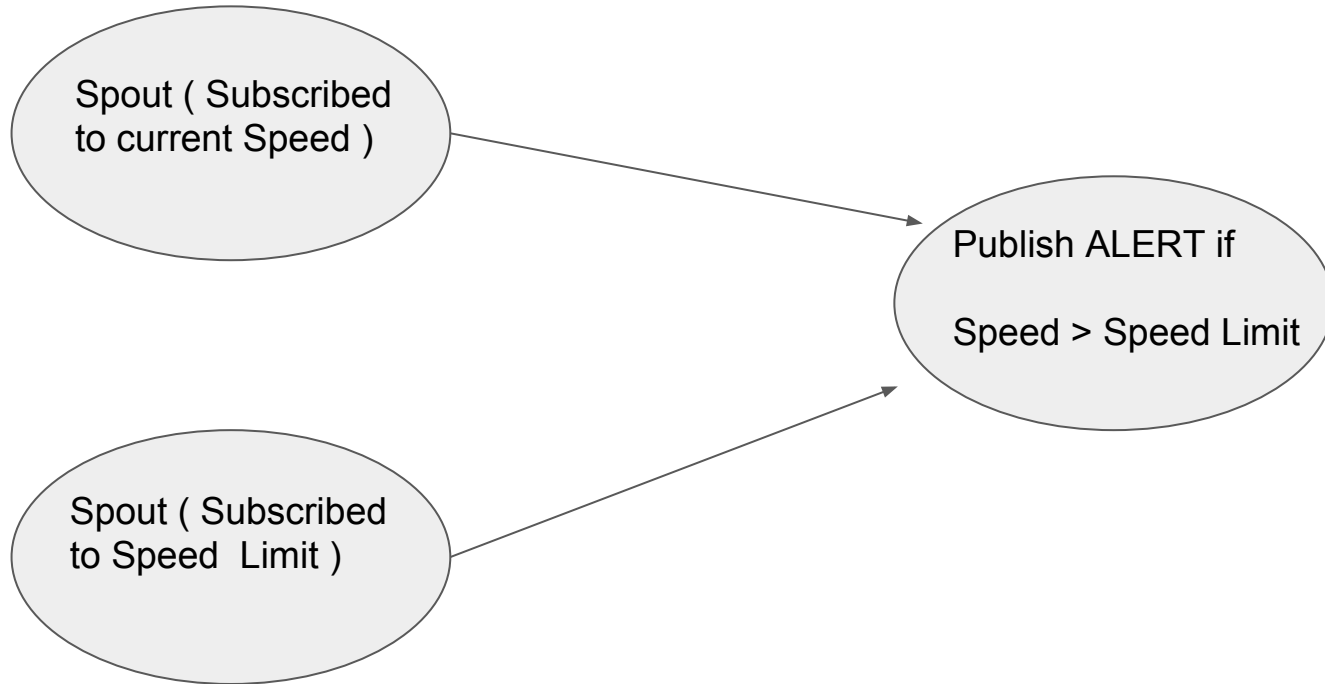
Detect Servicing status of the Car using O2 Sensor

Provide visualization for different parameters

The high level Overview



Storm Topology



Expected social impact/business value

- **Improved Safety**

Maintain driver and vehicle safety with remote vehicle diagnostics that make it easier for service centers to respond to driver drowsiness, vehicle theft, accidents, natural disasters, and requests for towing, repair, gasoline supply, and tire changes.

- **Higher Reliability**

Avoid downtime and expensive unplanned repairs with a vehicle performance tracking system that sends notifications of imminent maintenance issues.

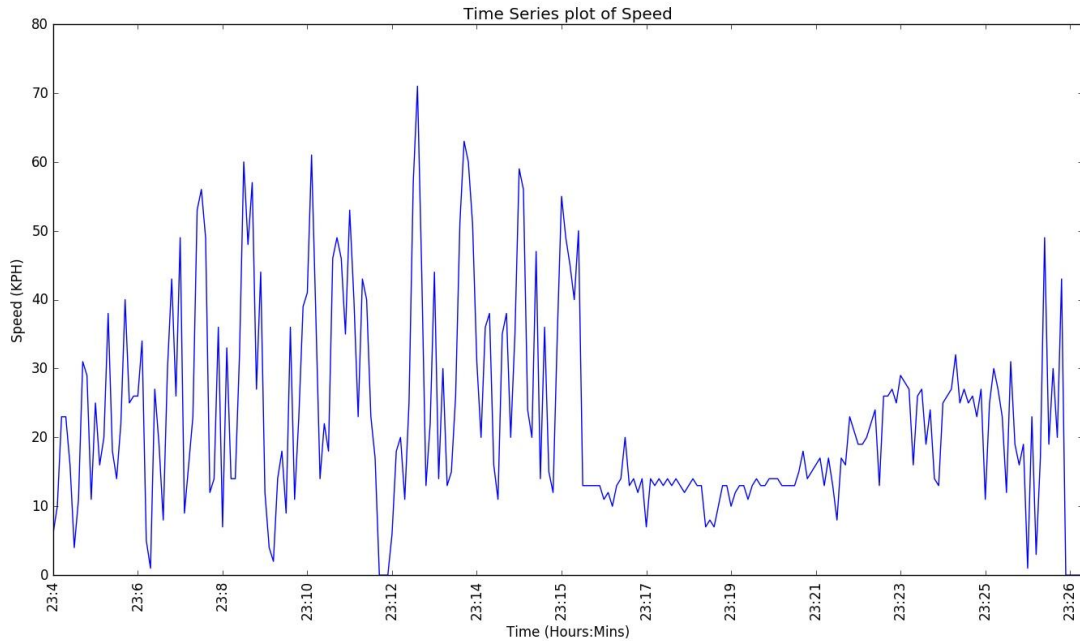
- **More Conveniences**

Enable drivers to access information on weather conditions, scenic spots, gasoline stations, rest stops, hotel rates, restaurants, parking lots, etc.

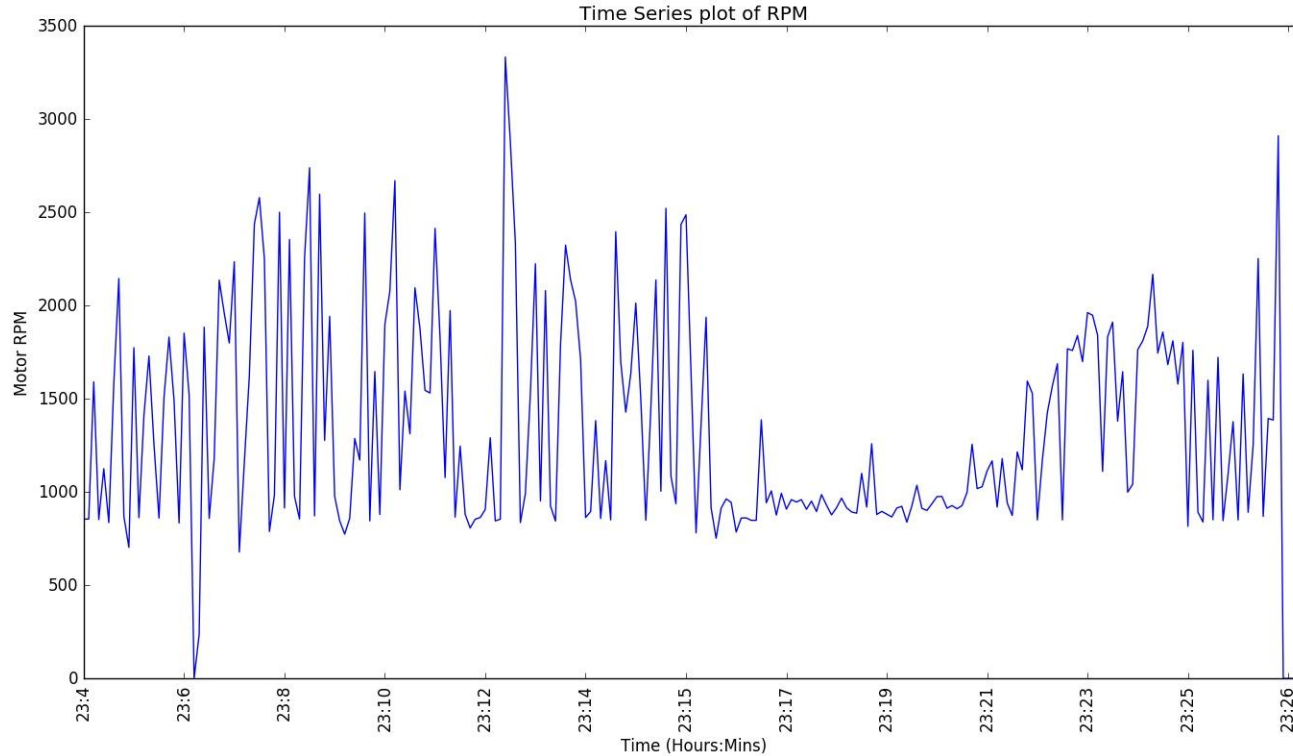
List of sensors/devices/software/tool chain used

- Sensor
 - OBD II Scanner
 - GPS (from smartphone)
 - Camera
- Software tools
 - Apollo MQTT
 - Apache Storm

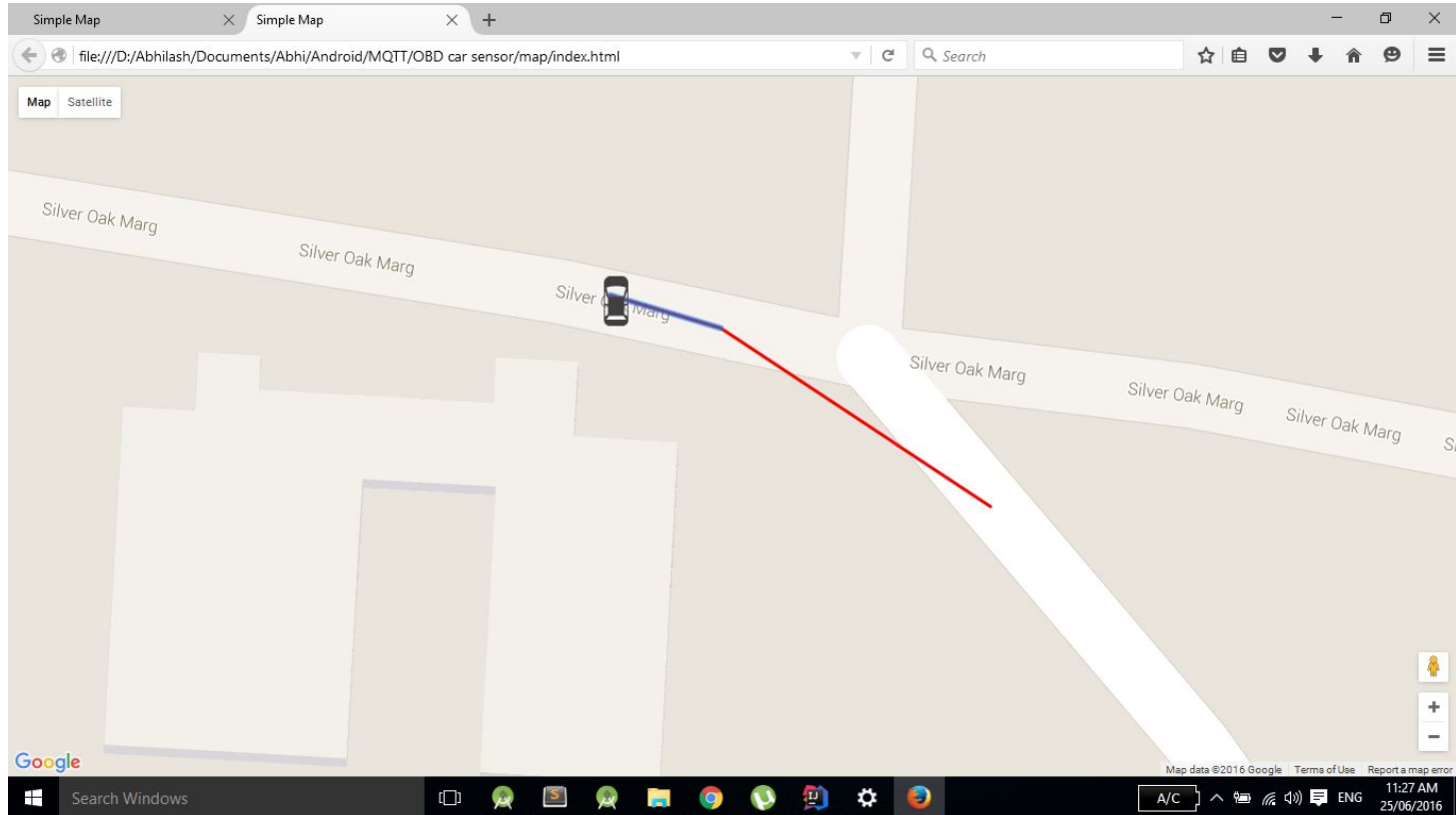
Results/outcomes



Results/outcomes



Results/outcomes



Future Work

- Generate alerts for
 - driver drowsiness,
 - vehicle theft
 - Accidents using more parameters like air bag deployment
- sends notifications of imminent maintenance issues.
- More convenience by providing notifications for
 - weather conditions,
 - scenic spots
 - gasoline stations