Easy Park

Find Parking super easy

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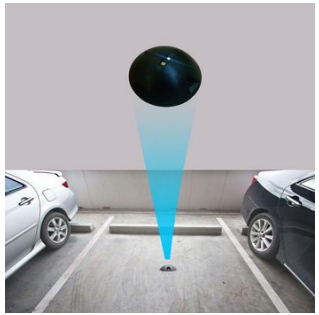
Contents:

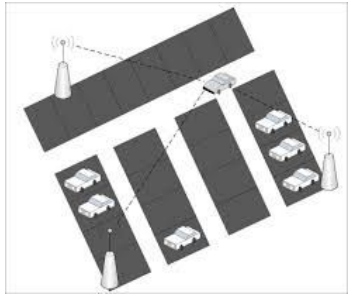
Goals of the project:



Smart Parking with sensors

Parking Availability

Computer Vision Cameras monitoring



Parking Utilization: APP management.

Need for a system like this:

Provide a faster and smooth process.

Accurate parking system.

APP based service.

Security through camera.

Reference for other systems to be built smartly.

Technology: Internet of Things(IOT) & Computer Vision

Improves Efficiency for the system.

Create innovative products.

Reduce costs comparing other tech options.

New Revenue systems

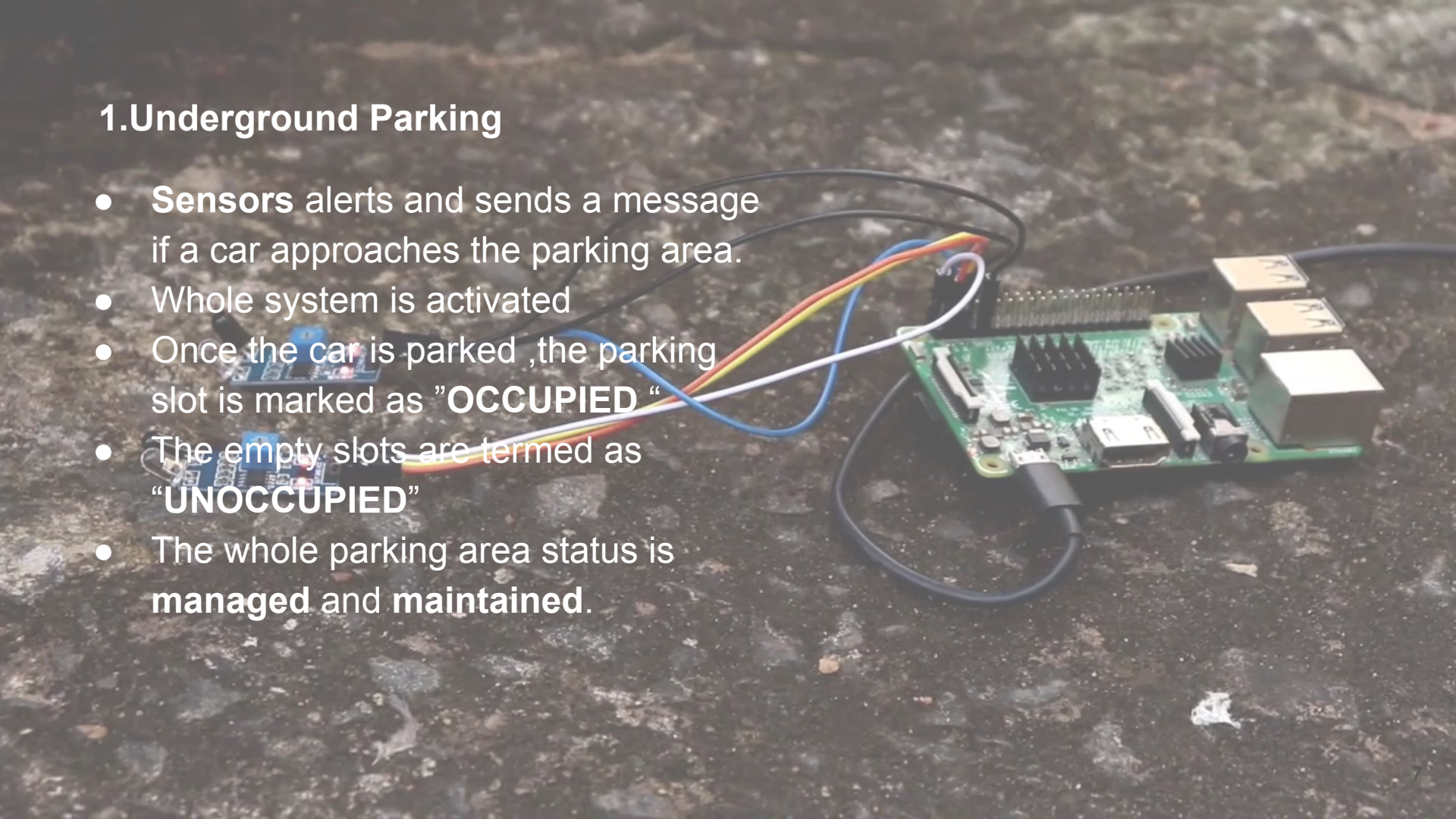
What’s our approach?

USING **IR SENSORS & IOT**
Infrared sensor are deployed to check whether a car is parked or not.

Computer Vision:
Cameras are installed to check the parking space and ensure security.

1.Underground Parking

- **Sensors** alerts and sends a message if a car approaches the parking area.
- Whole system is activated
- Once the car is parked ,the parking slot is marked as ”**OCCUPIED** “
- The empty slots are termed as “**UNOCCUPIED**”
- The whole parking area status is **managed** and **maintained**.



2.Pillar Parking:

1. Senses the approach of car and alerts the system.
2. Helps in counting the number of cars available in the parking slot
3. Deployed separately for each car
4. Easy to deploy and to maintain.

3.Overhead parking:

Sensors deployed above the car to fulfill the purposes.

What are the advantages for Camera based Parking

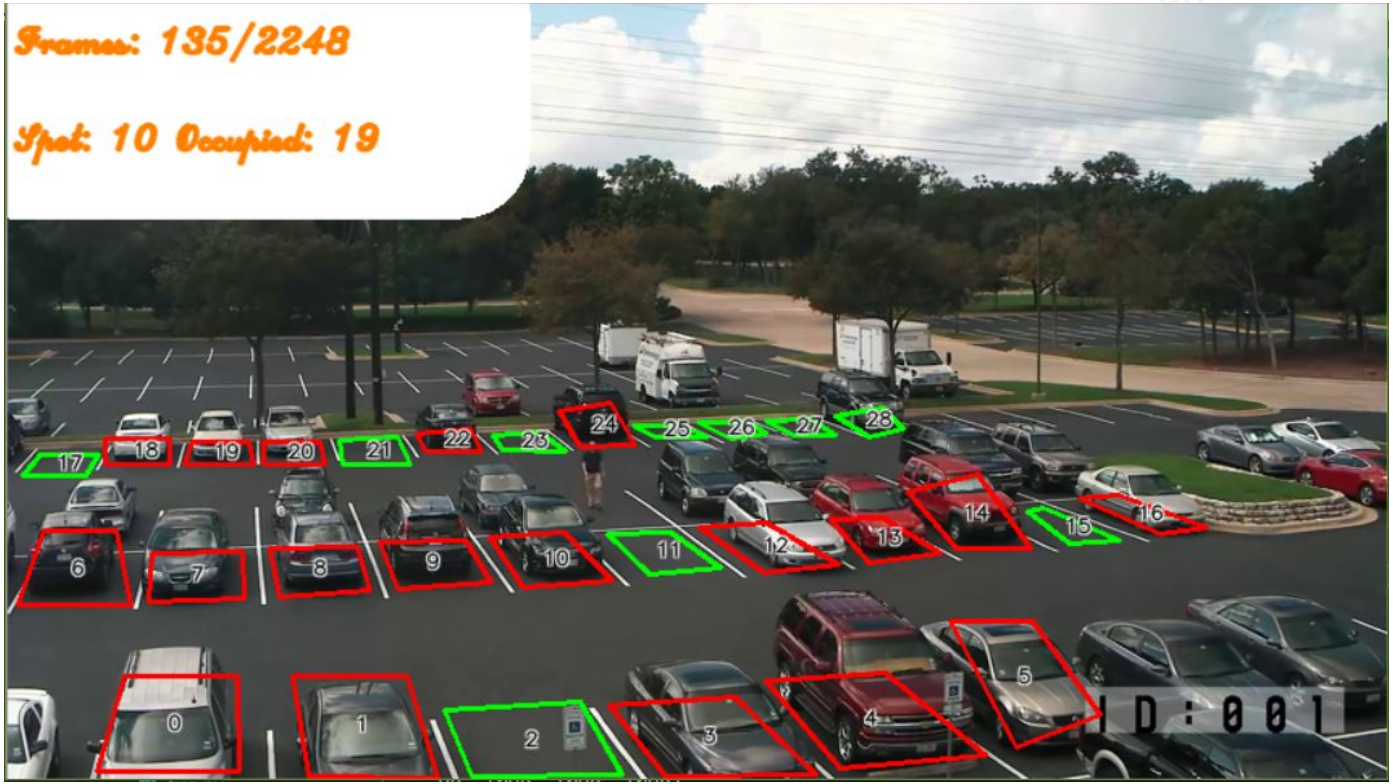
Monitoring
the parking area through a camera.

Controlling:
While iterating over each contours, we try to find whether a slot is occupied or not.

Autonomous
maximum hour facility

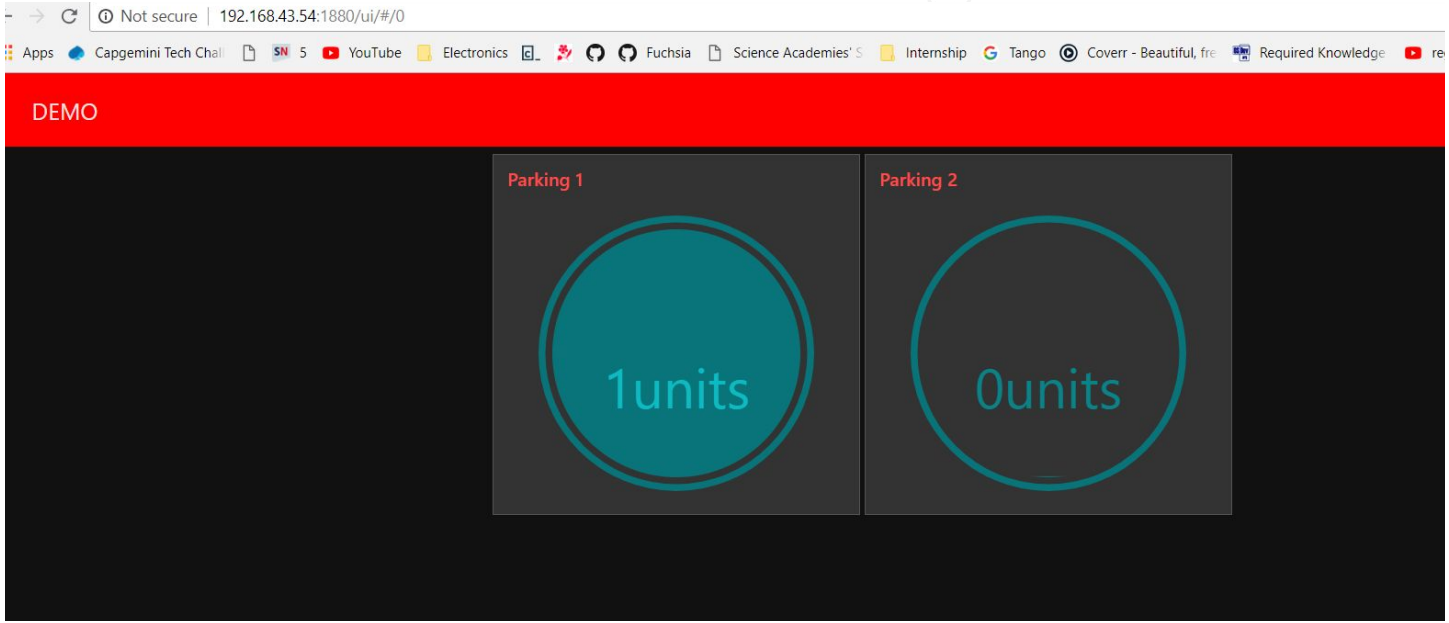
Optimize:stored the coordinates of the parking slots and the respective IDs in a YAML file

How camera can solve parking problems?



Parking Interface: Web App

Deployed on the local network .Showcases the number of cars present and number of slot available for parking.



Parking App:

1.ACCOUNTABLE DASHBOARD

2.RESPONSIVE FOR USERS

3.AN APP FOR ACTION,NOT TALKING.

4.CROWD SENSING VIA CITIZEN ENGAGEMENT IN APP

5.READILY AVAILABLE.

App we plan to make

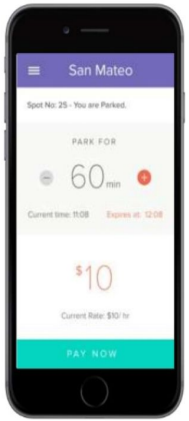
: Lookup parking options near your destination.

App we plan to make

: Get notified to extend. Or finish and exit

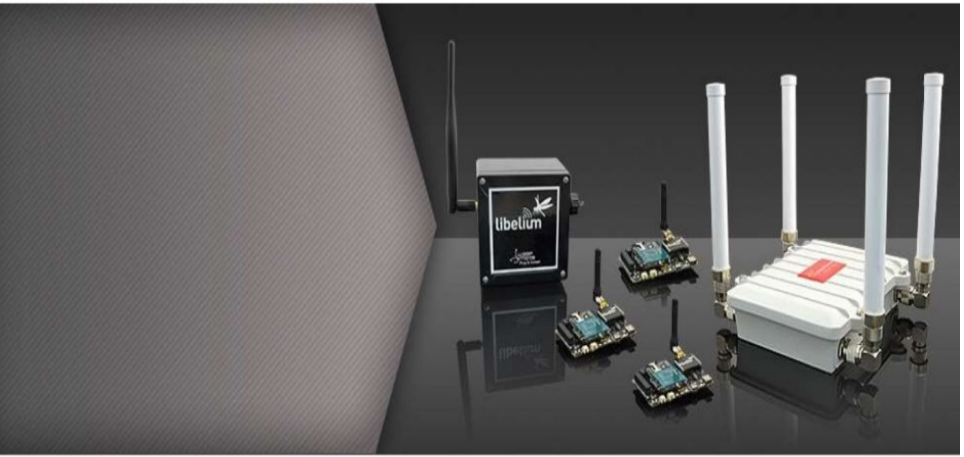
No more parking receipts.
Use QR code to exit

Park. Pre-pay to lock-in price.



Sensors we plan to use

rBA prefers Libelium (uses LoRa) However,



- Company doing a product refresh
- Current product requires significant road work
- 3x more expensive than Tinynode
- Software solution that rBA builds can be made hardware independent

A-4 Car Sensor

- ✓ Occupancy detection rate - 98% and more
- ✓ Resistant to harsh weather conditions
- ✓ Resistant to high mechanical constraints
- ✓ Battery life up to 10 years
- ✓ No road work needed.
- ✓ Warranty 3 years

How Network will work ?

Networks at end-points: LoRa