Smart Parking

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Functions

- Check parking availability
- Reserve a spot in advance
- Get guidance to the selected spot
- License plate reader for seamless entry and billing

Function 1 : Check parking availability

Before entering a parking, users want to know if they will be able to park there and potentially where.

- Know the number of available spots in real-time
- Display this number on the website / application
- Find spots for electric vehicules

Function 2 : Spot reservation in advance

If a user is in a hurry or if the user regularly park at the same parking, they might want to reserve a spot in advance.

- Using the website / application, visualise all available spots
- Select a spot
- Tag the spot as reserved on the website / application and in the parking lot

Function 3 : guide to you place

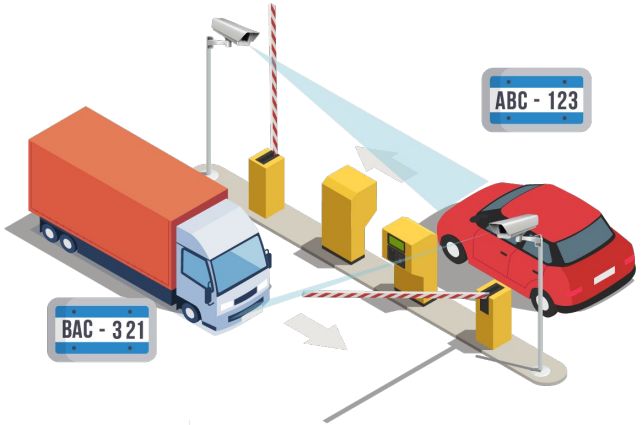
The parking has a lot of spots, a lot of floors but where are the available spots?

- Get guidance to the selected parking spot on your smartphone.

Function 4 : License plate reader for seamless entry and billing

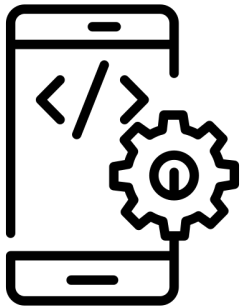
Having an no-ticket parking is great for multiple reasons :

- Faster entry, no need for physical tickets.
- Users can exit and enter on foot without a physical ticket.
- You can pay on your mobile for your stay

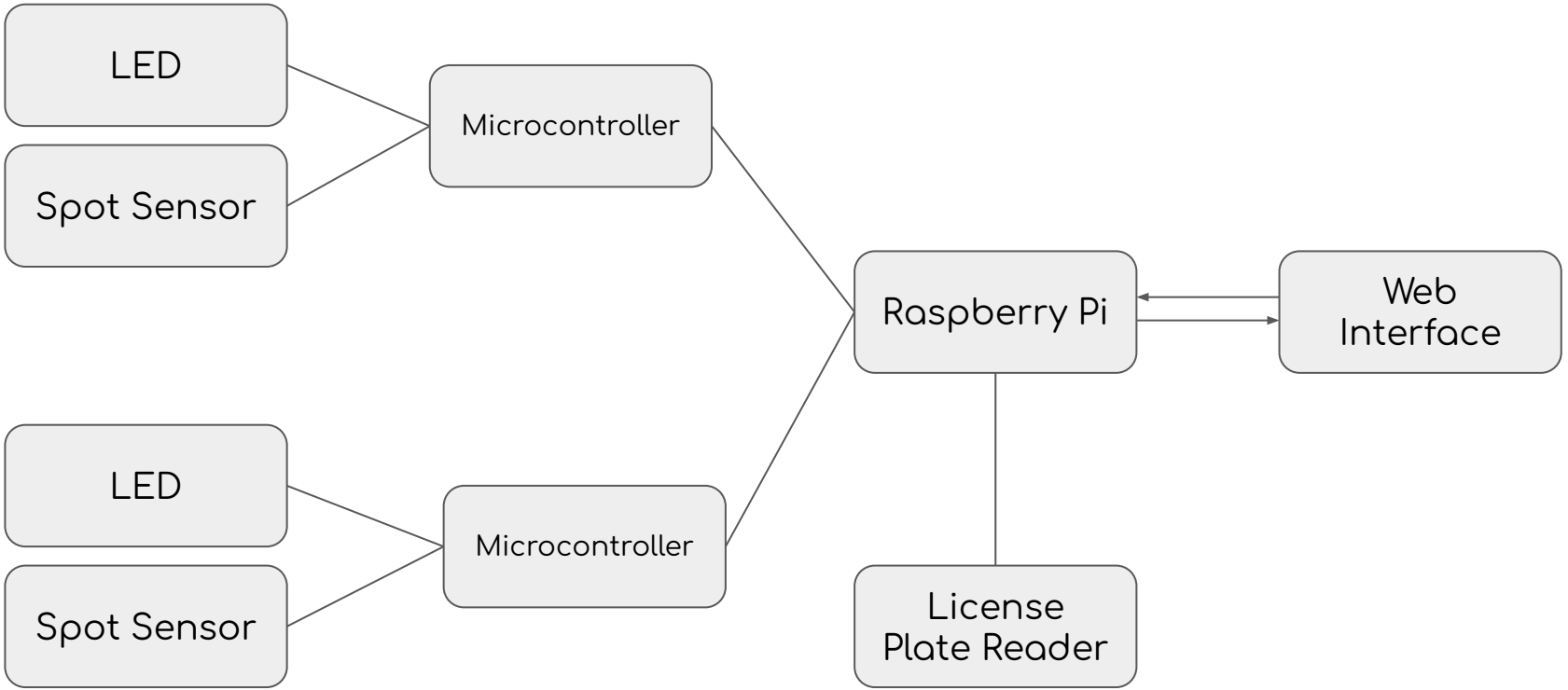


Architecture

- Sensor for the car detection (ultrasonic or infrared or accelerometer - to test)
- LEDs to notify the status of the parking spot
- Arduino to manage the sensors and LEDs, connected to Raspberry Pi using WiFi or Ethernet
- Raspberry PI for the central server
- Web application to do the functionalities

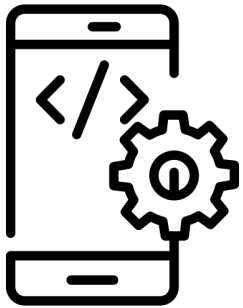


Architecture



Scheduling - tasks

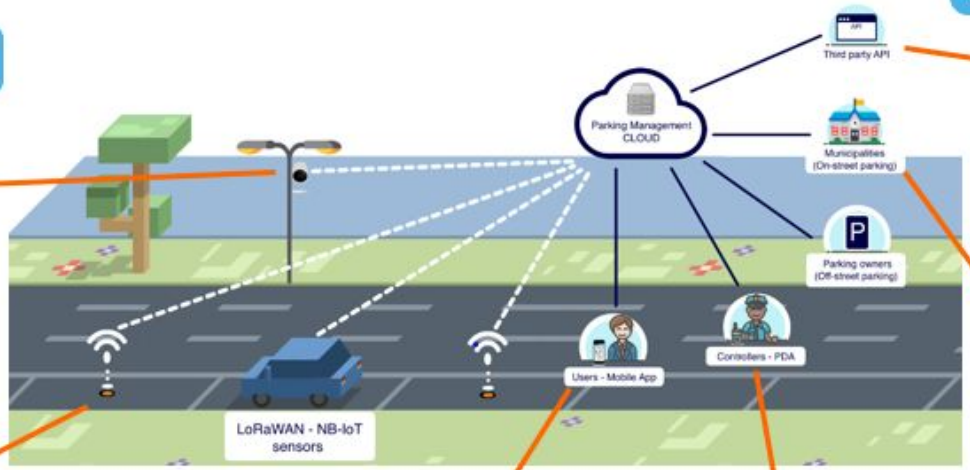
- Test which sensor is the best for the detection
- Develop a license plate reader algorithm
- Develop an API to discuss between the sensors and the Raspberry PI
- Create the web application with a great interface
- Work on a system to recreate the parking in the app (for the owner) - a virtual twin of the parking
- Work on algorithm for the guidance in the parking



Capteurs de collecte d'informations

Caméras ANPR

Capteurs de stationnement (au sol)



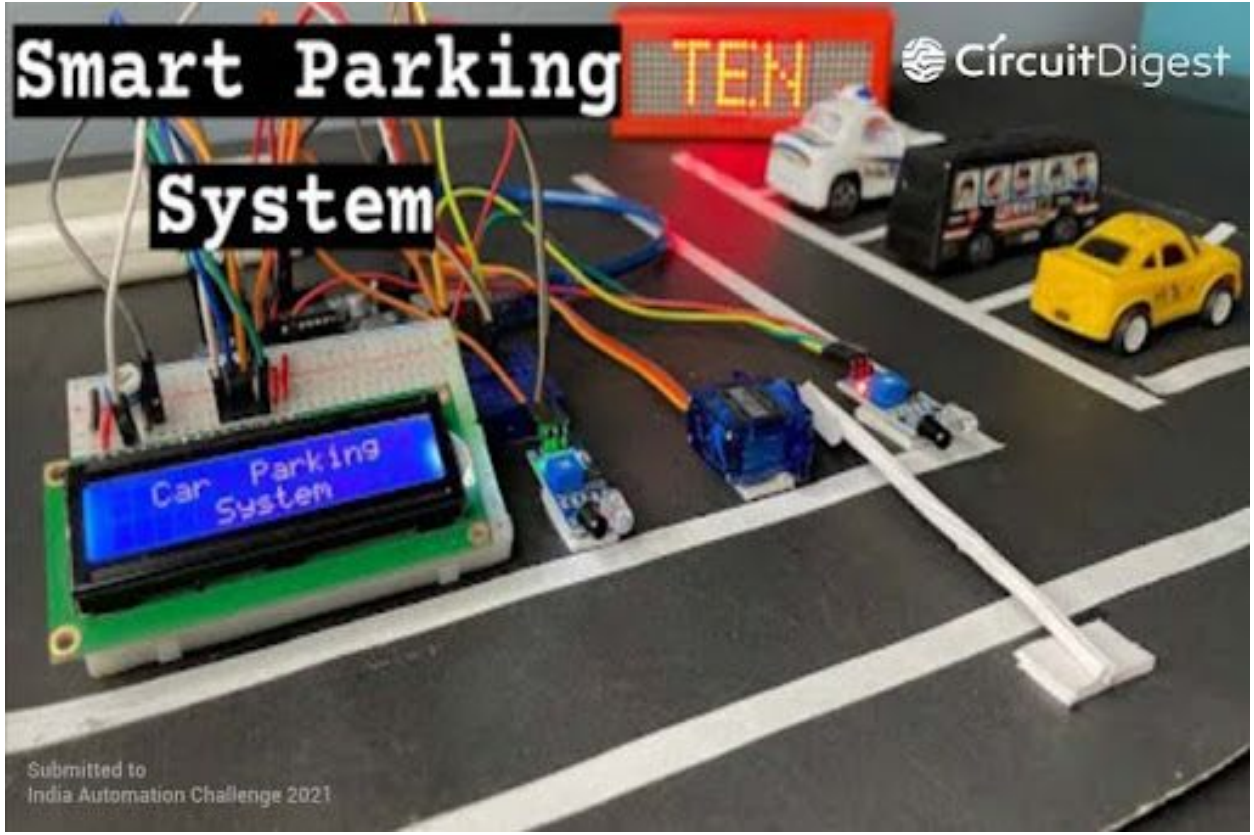
Interface de programmation S'intégrer à vos équipements existants

Panneaux digitaux, voitures connectées, Waze,…

Interface statistiques et gestionnaire

Interface utilisateur Disponibilités / réservation

Interface contrôle


Smart Parking
System
TEN
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Car Parking
System
Submitted to
India Automation Challenge 2021