

RedXParking

Transforming your parking experience in
urban areas

OUR TEAM

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INTRODUCTION

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- How many hours have you wondered around the Melbourne city without being able to find a parking spot?
- Car parking is the leading issue out of Top 5 issues in 2019 for Yarra City.
- How many times have you paid excess amount of money to find a parking at your comfort?
- Considering the facts we decided to address the issue by creating a data driven IoT solution.

Outcome of the system

- Before

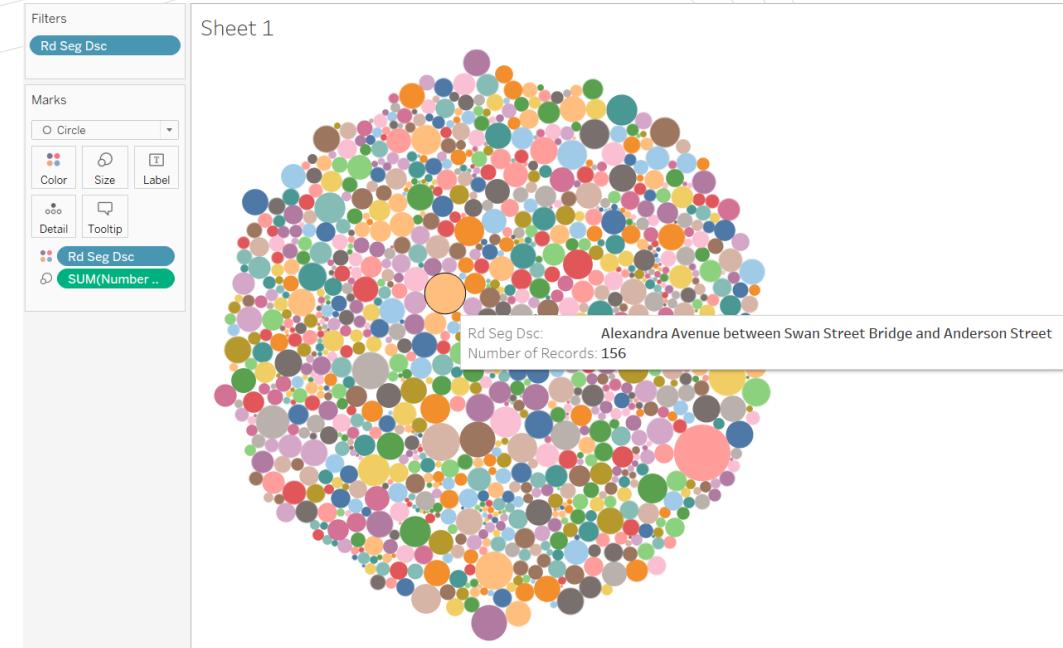


- After



The solution for drivers about parking availabilities is the smart system which is RedXParking application which makes their drive easier and saves time.

Melbourne Parking Bays



The graph represent the number of parking bays in respective streets which is noted by Melbourne Open Data

Parking Locations

The graph represents the parking locations where the sensors are installed to monitor the status. Noted by Melbourne Open Data



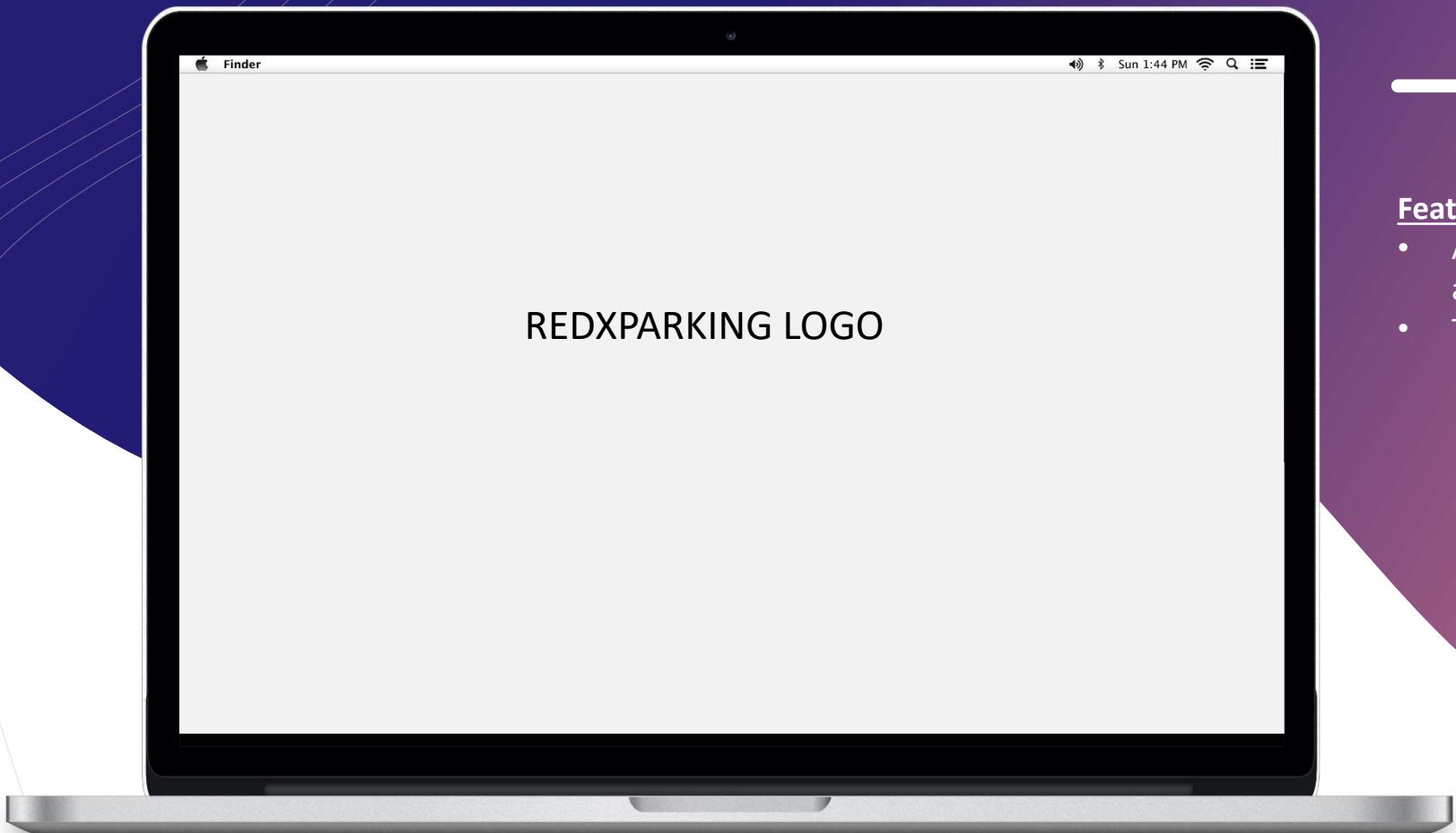


OUR SOLUTION

OUR SOLUTION

- Almost every smart city has underground parking sensors used to issue parking tickets.
- Data driven solution to address the issue using the publicly available dataset.
- For the parking spots that doesn't have sensors we implement our own sensors.

RedXParking



Features of the application

- Able to find the parking bays around location
- To check the parking bay status

PROPOSED SYSTEM

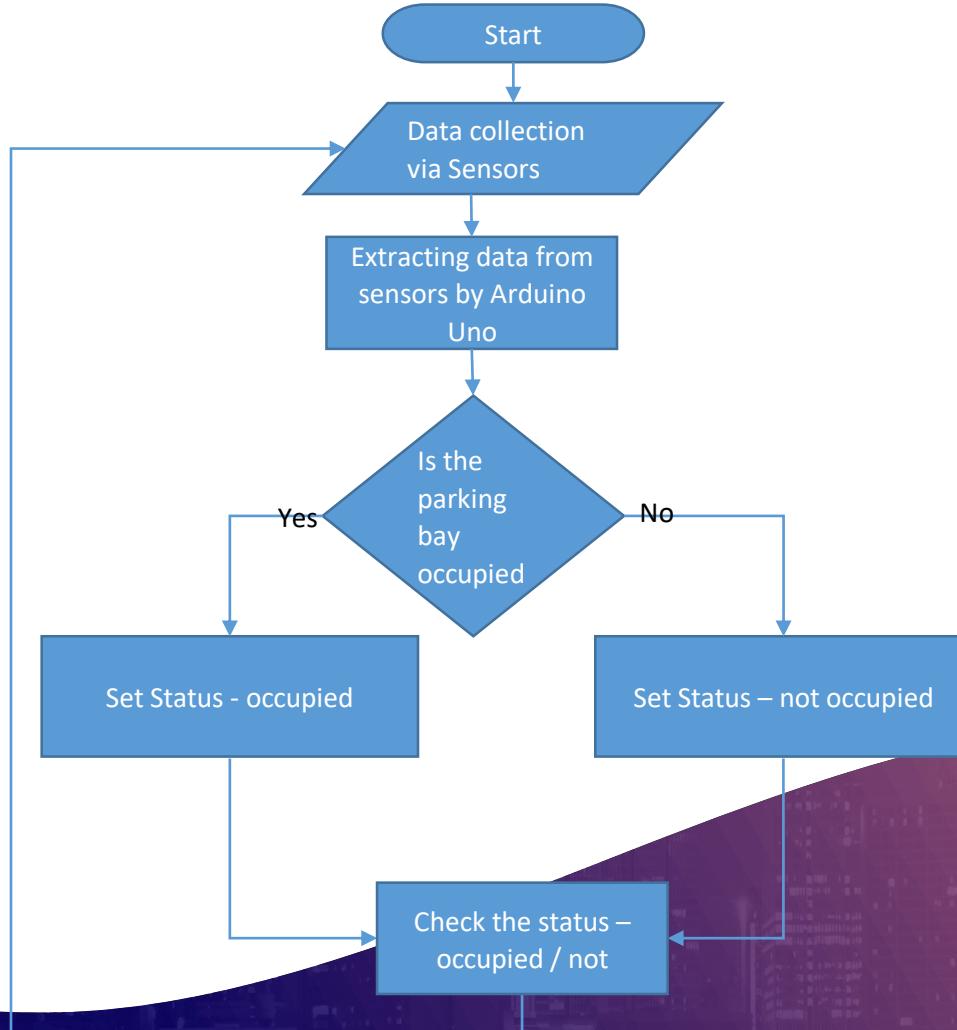
How it is implemented

Step 1

Sensors are used to collect data from the parking bays

Step 2

Collected data is sent via Arduino Uno to Raspberry Pi



Step 3

Data is shared via WIFI from Raspberry PI to a web server

Step 4

Data is presented on a web application



HARDWARE

Things used in the project :Hardware

Sensors - PIR Sensors and Ultrasonic sensor will be used to retrieve the data from the streets to check whether a vehicle is parked in the bay or not.

Arduino Uno – Data is collected from the connected sensors are sent to Raspberry Pi via serial port.

Raspberry Pi – Data is share via WIFI connection.



HARDWARE

- Arduino platform is used to create the basic prototype needed for implementation.
- AtMega328p is used as the base microcontroller for the final design.
- For the sensors we are using ultrasonic range finding sensors.
- Raspberry Pi is used to create nodes to json data logging to the central node (Cloud Service)

The background features a dark, stylized cityscape of skyscrapers with a grid-like pattern. Overlaid on this are several large, semi-transparent purple circles of varying sizes, some overlapping the text and others positioned around it.

SOFTWARE

Things used in the project: Software & Programming languages

- Software
 - Arduino IDE – Implementation for PIR Sensor to work is compiled on sketch and uploaded to Arduino Uno Board
 - AtmelStudio – Program the AtMega328p without Arduino Interface.
- Programming Languages
 - HTML, JavaScript, CSS will be used to design the web application.
 - Json will be used to exchange the collected data from server to website.

Reference List

City of Melbourne , "On-street parking data," City of Melbourne , 2019. [Online]. Available: <https://www.melbourne.vic.gov.au/about-council/governance-transparency/open-data/Pages/on-street-parking-data.aspx>. [Accessed 08 September 2019].

THANK YOU

