

Product Overview

Intelligent Car Park Management System

The Intelligent Car Park Management System web application aims to help the car parking administrators in getting the information such as vehicle model and vehicle plate number of the vehicles in the car park. The system consists of 2 major functionalities, which are vehicle model recognition and license plate number recognition, respectively. The system would capture the image of the car with camera, and then perform the recognition task of the vehicle model and license plate. The system will also be able to detect the driver face and check if they are identical.

This application also includes parking fee calculation which can calculate the parking fee for each vehicle based on their respective entrance time to the parking and exit time from the parking automatically. This feature will be beneficial to the environment as it replaces the usage of parking ticket and reduce paper waste.

Before using to application, the user has to setup the application with installing all the required software and packages. After the setup, the user can run the application on localhost.

Thus, Intelligent Car Park Management System is a useful application for the people especially car park administrators as the system could assist them in manage the vehicles in the car park efficiently as the system can recognise the vehicle brand and its license plate, making it easier to track and locate a certain vehicle in the car park.

Vehicle Model + License Plate Recognition for Parking Entrance

Intelligent Car Park Management System

Upload Image


Drag and drop file here
Limit 200MB per file • JPG, PNG, 3PEG

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IMG_37531.JPG 2.9MB

×

Original Image



Recognise

Detected vehicle model:
Audi TTS Coupe 2012

Detected license plate number:
MCF29

The vehicle enter the parking at:
2021-01-28 16:58:00

Fig. 1: Vehicle Model Recognition and License Plate Recognition Function for Parking Entrance Page

Vehicle Model + License Plate Recognition for Parking Exit

Intelligent Car Park Management System

Upload Image



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Browse files



IMG_37531.JPG 2.9MB



Original Image



Recognise

Detected vehicle model:

Audi TTS Coupe 2012

Detected license plate number:

MCF29

The vehicle exit the parking at:

2021-01-28 17:18:43

Fig. 2: Vehicle Model Recognition and License Plate Recognition Function for Parking Exit Page

Driver Face Recognition

Intelligent Car Park Management System

Image at Entrance

Upload Image



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driver_man.JPG 59.6KB



Image at Exit

Upload Image



Drag and drop file here

Limit 200MB per file • JPG, PNG, JPEG

Browse files



driver_man_edited.jpg 263.7KB



Result: The driver is identical. Access to leave car park is granted!

The value of MSE:

293.59479166666665

Fig. 3: Driver Face Recognition Page

Parking Fee Calculation

Intelligent Car Park Management System

Parking Date:

2021/01/21

Which vehicle you would like to choose?

MDC4

Vehicle Entrance Time:

2021/01/21, 16:40:52

Vehicle Exit Time:

2021/01/21, 21:45:28

Total parking duration (in minutes):

304

Total Parking Fee:

Parking fee for 304 minutes is RM 7.00 🚗

Fig. 4: Parking Fee Calculation Page

Car Park Database

Intelligent Car Park Management System

	vehicle_brand	plate_number	enter_time	exit_time
0	Volkswagen Golf Hatchb...	MA0 1306	2021/01/17, 14:57:44	
1	Volkswagen Golf Hatchb...	MA0 1306	2021/01/15, 16:37:04	
2	Mercedes-Benz E-Class ...	190 MAU	2021/01/13, 15:48:04	
3	Chrysler Town and Coun...	190 MAU	2021/01/16, 16:32:11	2021/01/16, 21:
4	Chrysler Aspen SUV 2009	190 MAU	2021/01/17, 19:16:03	2021/01/17, 19:
5	Mercedes-Benz E-Class ...	190MAU	2021/01/20, 13:18:28	2021/01/20, 15:
6	Volkswagen Golf Hatchb...	2608 MAT	2021/01/13, 15:15:34	
7	Mercedes-Benz Sprinter...	3132 WUG	2021/01/12, 17:14:37	2021/01/12, 22:
8	Lamborghini Gallardo L...	584 MCW	2021/01/12, 16:50:24	
9	Lamborghini Gallardo L...	584 MCW	2021/01/08, 17:55:53	
10	Lamborghini Gallardo L...	584 MCW	2021/01/16, 16:45:39	

Fig. 5: Car Park Database Page

No of Vehicles in the Car Park

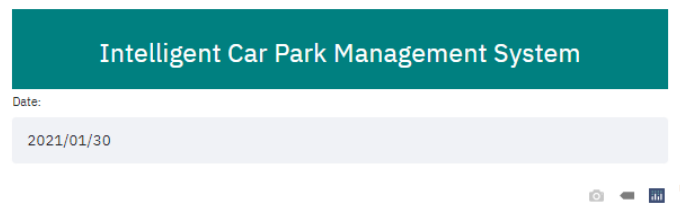


Fig. 6: No of Vehicles in the Car Park Page

No of Parking Transactions by Day

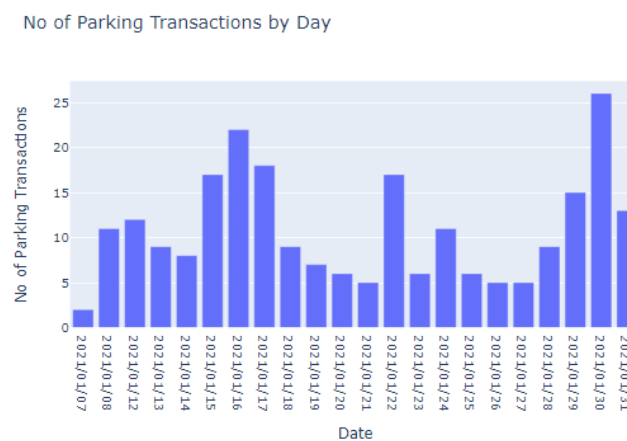
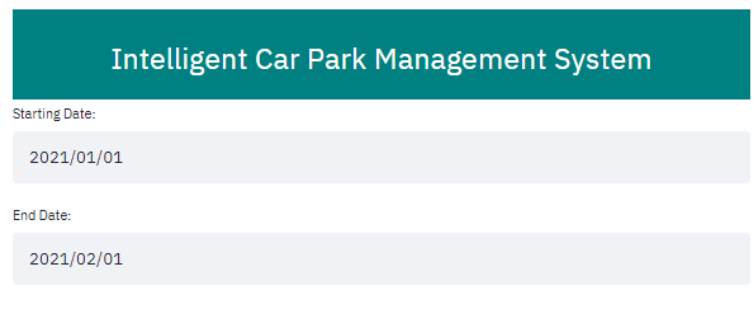


Fig. 7: No of Parking Transaction by Day Page

Amount of Parking Fee Collected by Day

Intelligent Car Park Management System

Starting Date:

2021/01/01

End Date:

2021/02/01

The total parking fee collected from 2021/01/01 to 2021/02/01 is:

RM 476.00

Amount of Parking Fee Collected by Day

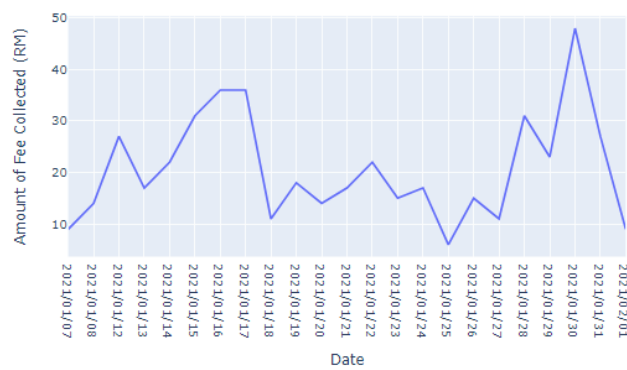


Fig. 8: Amount of Parking Fee Collected by Day Page

Payment Gateway

Intelligent Car Park Management System

Parking Date:

2021/01/30

Which vehicle you would like to choose?

WSB9393

Amount to be paid: RM 10.00

Payment Details



CARD NUMBER:

CARD TYPE:

Visa

EXPIRATION DATE:

CVV CODE:

CARD OWNER:

Pay Now

Fig. 9: Payment Gateway Page