GRADUATION PROJECT SHOWCASE 8

جامعة الإمام عبدالرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY
كلية علوم الحاسب وتقنية المعلومات
College of Computer Science and Information Technology
CIS

الحلول السيبرانية™
Cyberani Solutions

Parkin: Smart Parking System using Image Processing

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About ParkIn

The Parkin system is a smart parking solution that can tackle the problem of spending excessive time searching for an available parking spot. It works by utilizing sensors, a computer system, and display panels to efficiently manage parking and minimize traffic congestion, time wastage, expenses, car emissions, and pollution. There are different techniques that can be employed to detect vehicles in the parking area, such as image processing, which uses cameras to capture several cars simultaneously. The images are then analyzed using software that compares the variations between successive frames. The parking lot detection is achieved by recognizing the circular green icon in each parking space, and the system can be easily adjusted as needed. The project uses OpenCV software and real-time parking lot images.

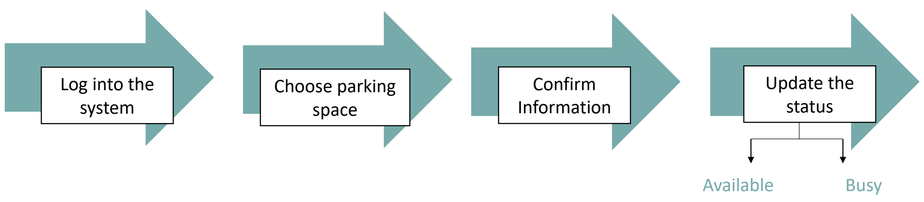
Problem Statement :

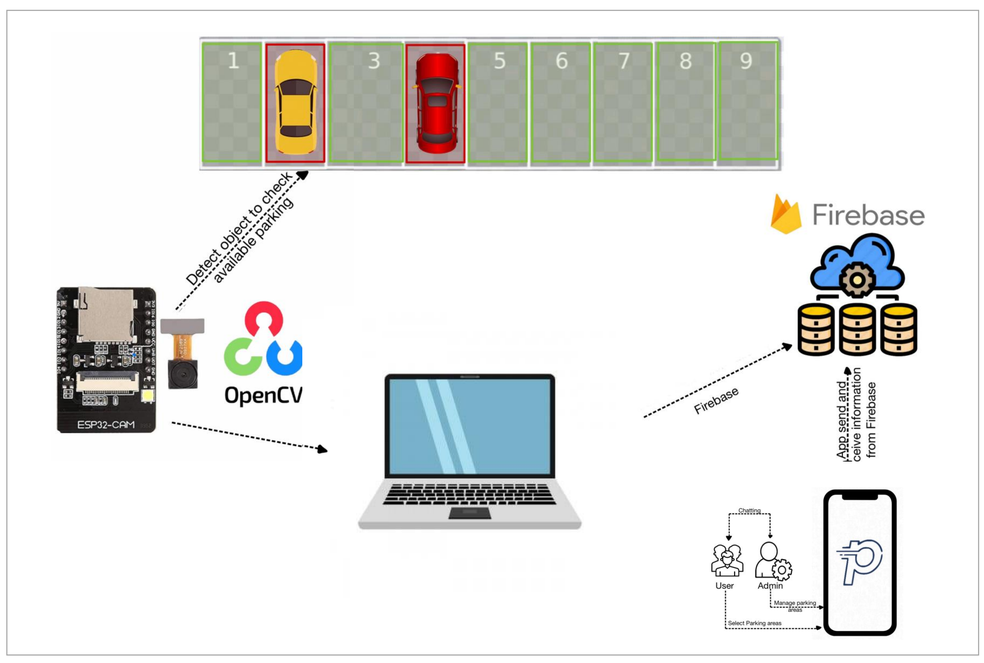
Nowadays, with the increase in daily arrivals at the AlRakah campus of Imam Abdulrahman University, the availability of parking spaces has become a pressing issue. This poses a challenge for students, staff, and visitors who struggle to find vacant parking spots, leading to wasted time and potential lateness for work or classes.

Objectives:

- Use IoT to improve existing solutions to reduce car congestion.
- Improve overall parking area experience of the College of Computer Science and Information Technology to increase efficiency of the parking.
- Help drivers to save time and book space through a mobile application remotely.

Methodology:





Research Gap:

Feature/ Application	Application Uniqueness			
	Parkyy	Thaki	ParkIn	Mawqif
Looking for a parking by location	✓		✓	✓
Real-Time Detection			✓	
Detects Vehicle			✓	
Ease of reservations process	✓	✓	✓	
Able to easily contact to customer care	✓	✓	✓	
Provide all services free without fees			✓	
Looking for nearest parking	✓		✓	✓