



VEHICLE STORAGE AND RETRIEVAL SYSTEM WITH IMAGE PROCESSING

Group I Monster

Bekir Yasin HÜYÜKLÜ, İpek GEÇİN, Melike NALBANT

Supervisors: Asst. Prof. Şölen KUMBAY YILDIZ

Aylin HATİP İPEK, Merve ÇAM SİLİK

HACETTEPE UNIVERSITY

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



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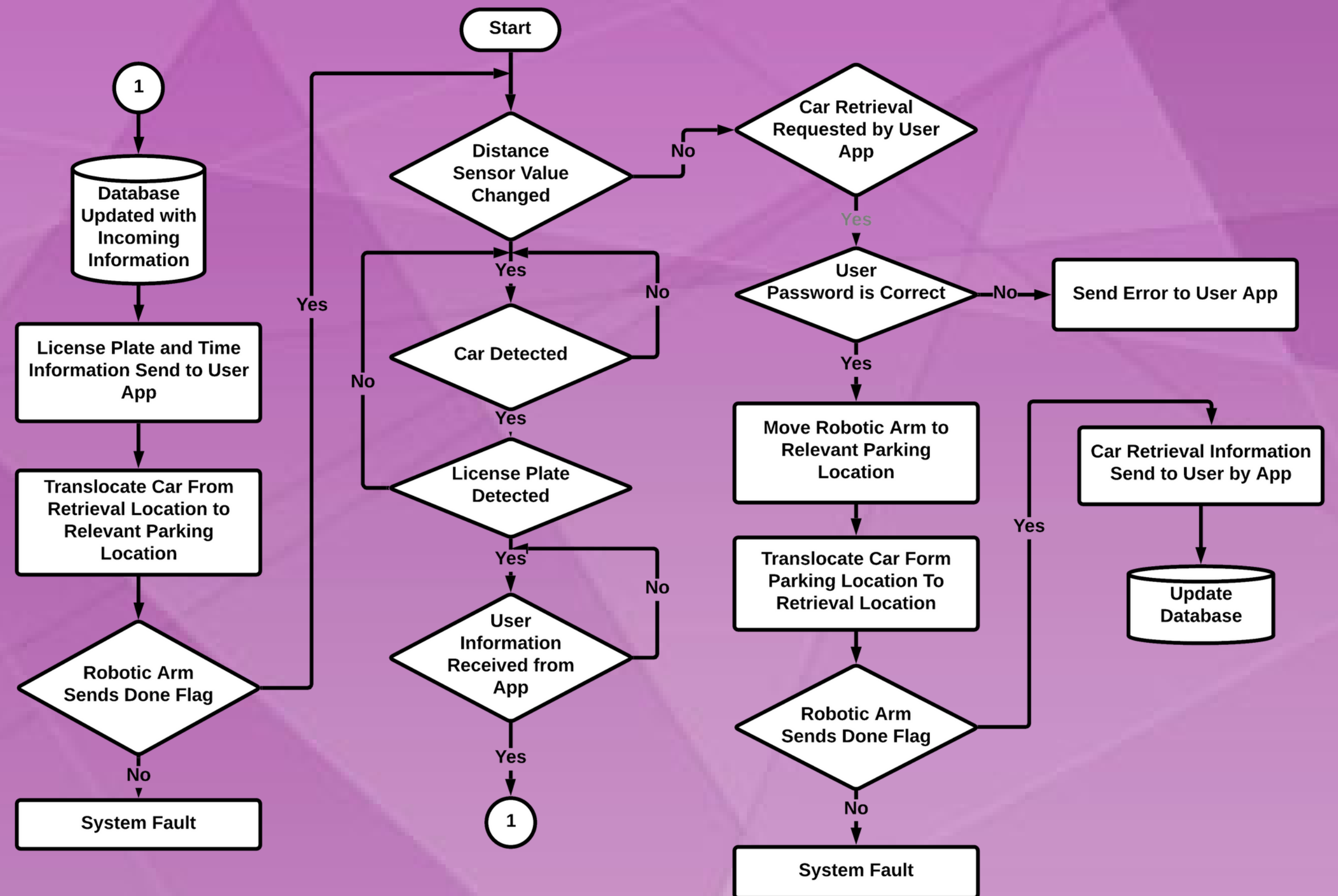
INTRODUCTION

The motivation of this project is to provide a multilevel parking solution. The project consists of an autonomous 5-DOF robotic arm with image processing capabilities and a parking facility.

SOLUTION METHODOLOGY

The robotic arm contains five rotational joints which enable 5-DOF motion. An ultrasonic sensor car is used to detect the car at the retrieval location. Then the car detection using Raspberry Pi Camera and YOLO v3 object detection algorithm is completed. The license plate of the car is recognized by Tesseract OCR Engine. A mobile application is used to update the system database with the login information of users and car location in the storage facility. The robotic arm carries the car from retrieval location to parking location if 'Leave My Car' option is selected. If 'Retrieve My Car' option is selected, robotic arm carries car from the parking location to retrieval location

SYSTEM OPERATION FLOWCHART



RESULTS AND DISCUSSION

In this project hardware design of a robotic arm is completed. Machine learning and image processing techniques are used for car detection and license plate OCR recognition. All project requirements are satisfied in the final design. This project is a combination of multidisciplinary subsystems.

