# Raspberry Pi car parking system

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Blog QR code

## Introduction

Car parking system that can be remotely accessed, designed to enhance convenience management

## Component

- Raspberry pi 4b
- LCD screen
- Webcam
- Servo motor
- Selfmade Car model

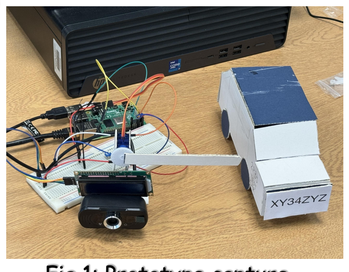


Fig 1: Prototype capture

## Implement

- **Reader:** Open CV (Open Source Computer Vision Library) and Tesseract-OCR （Optical Character Recognition）
- **Motor:** PWM signal duty cycle

## System

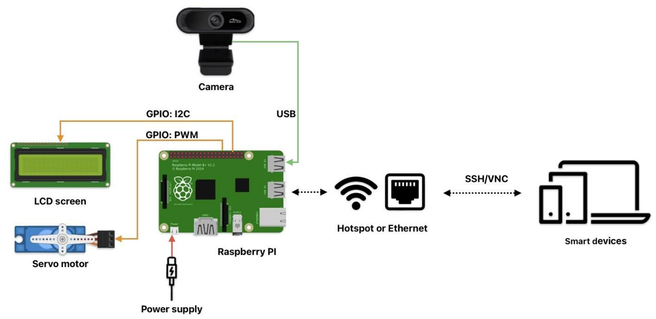


Fig 2: Hardware and network

## Function Procedure

- License plate digital recognition
- Database data comparison
- Synchronous operation of motor and LCD display

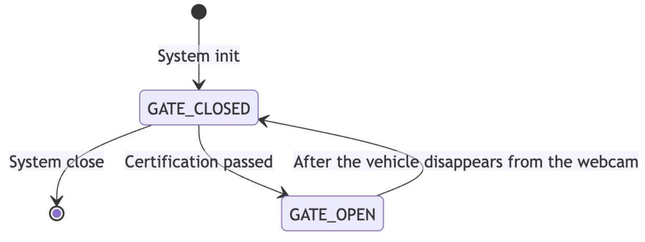


Fig 3: Programme Procedure

- Terminal Database management application

## Result

- **Detection:** The detection software clearly capture the plate number


Fig 4: License plate recogntion system

- **LCD:** Display outputs based on detection results, the LCD indicator manifests different statuses: *Successful* recognition prompts a "Welcome" message alongside the vehicle's plate characters (Fig.5) *Failure* results display "Invalid" (Fig.6)


Fig 5: LCD Display 1: Successful recognition

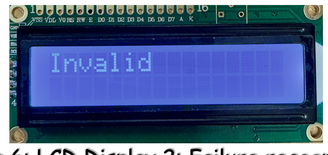


Fig 6: LCD Display 2: Failure recogniton

## Further Improvement

- **Reader:** Inadequacies in Recognition Accuracy and Delays in Recognition Speed
- **Database UI:** Exclusively Accessible via Local Area Network, Prohibited from Public Internet Access
- **Indicator:** Lacks conspicuous and succinct RGB cues