Smart Garage

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ABSTRACT

Smart home appliances have gone from a luxury item to a trend that most of us are willing to use. There are daily, repetitive actions that can be automated like managing your garage door with license plate detection and using a mobile application which is convenient to have in your pocket.

KEYWORDS

RaspberryPi, iOS, Android, License Plate Detection, Motion Sensor, Servo Motor

2. DESIGN

The approach we took in designing the system was to divide it into four components: We used PIR motion sensor to detect motion. Whenever a motion is captured by the sensor, a picture is taken which is embedded to RaspberryPi. If there is a contour can be extracted in the picture which contains strings that match user’s car plate, raspberry Pi monitors the motor. Third
component is the cross platform mobile application that gives direct accessibility to control motor

PIR Motion Sensor

An electronic sensor that measures infrared (IR) light radiating from objects in its field of view. It captures motion through variation in the heat through IR rays and triggers

Servo Motor

Servo Motor is used to stimulate the action for opening and closing the door.

Mobile Application

Blynk mobile application platform is used to communicate with Raspberry Pi using same network. Once user interacts with the app and action is forwarded to RaspberryPi for further processing.
Connected the PIR sensor ground to GPIO 18 which give input to the pi when there is a motion is sensed, the Vcc is connected to the 5 V pin and the Out is connected to ground of the pi. The servo signal is connected to the GPIO 17 which is GP out which is signaled when there is motion detected, the Vcc connected to 5 V and GND is connected to the ground of the raspberry pi.

5. EVALUATION

We have successfully evaluated our project by using PIR motion sensor, Servo motor, Raspberry pi and the android mobile application. We have tested the system with different scenarios.