

IOT BASED SMART PARKING SYSTEM PROTOTYPE USING RFID AND ESP32 CAM

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ABSTRACT

An integrated automatic parking system, equipped with real-time security monitoring features, provides convenience in monitoring and monitoring vehicles. With monitoring support via smartphone, users can monitor their vehicles remotely. This research aims to develop a simple parking system as an example of a concept. In this system, the device is connected to a smartphone via the Telegram application using the ESP32 CAM as an image receiver from the parking area. The system also involves the use of a card that can be carried by the vehicle owner, which stores login data and has been specially programmed via the Arduino IDE application. This card interacts with Arduino Uno which is equipped with an RFID sensor as an identification module. This research provides the basis for the development of more sophisticated parking solutions in the future. The RFID reader test results show its ability to read cards within a distance range of 1 cm to 5 cm, with an average incoming response time of 4.4 seconds and an average outgoing response time of 3.3 seconds. However, the ESP32 CAM test results when capturing images showed an error rate of 43.33%.

Keywords: *Parking system, monitoring, RFID*