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RFID Based Smart EV Charging and Gate Control System

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Abstract: *Infrastructure for safe, effective, and automatic charging of electrical cars (EVs) is vital because of their developing popularity. In order to assure that simplest authorized users can access charging stations and constrained areas, this inspiration indicates an RFID-based smart EV charging and gate control machine. The era acknowledges people through RFID tags, opens the gate, and mechanically permits access to the charging station. The manage logic and authentication are managed the use of an Arduino microcontroller. The machine initiates the billing technique and logs the consultation after the user has been authenticated. Access is refused to unauthorized users, ensuring safety and averting abuse. The system may be installation in public charging stations, enterprise campuses, or residential neighbourhoods. It will increase safety, complements strength management, and lessens the want for human involvement. The assignment gives a scalable, inexpensive solution through integrating automation, IoT, and sustainable strength support.*

Keywords: RFID Authentication, Smart EV Charging, Gate Automation, Arduino-based Control, RFID Reader and Tags, Microcontroller Automation

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