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(57) Abstract :
The work aims to improve the efficiency of fuel dispensing systems in petrol bunks resulting in higher fuel efficiency, cost savings and increased range for vehicles. Nowadays, everything is automated using different emerging technologies. The purpose of this project is to reduce manpower and human errors such as fuel theft, ensuring cash security. The RFID technology may provide efficient usage of the fuel by assigning a specified amount of fuel for registered vehicles preventing unauthorized dispensing. Depending on vehicle types, each vehicle will get enough fuel. Users are provided with unique RFID tags for identification, enabling quick and secure authorization. The RFID reader at the fuel dispenser quickly verifies the tag, allowing authorized users to initiate fuelling, enhancing security for both petrol pump operators and customers creating a trustworthy environment. Additionally, it reduces the time delay at petrol stations. The system uses GSM technology to send the transaction data to customer mobile devices. This real-time communication allows users to receive instant updates on their Fuel transactions, promoting transparency and convenience. The RFID-based petrol pump automation system offers a more efficient and user-friendly approach to fuel dispensing, reducing the need for manual intervention and minimizing maintenance costs, and ultimately a more reliable and user-friendly fuel dispensing experience

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