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IOT ENABLED SMART CHARGING STATION FOR ELECTRICAL VEHICLE

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Abstract: The need for a cleaner environment has prompted the development of green vehicle technology, such as electric automobiles, which are also cost effective. Because the number of electric vehicles (EVs) on the road is increasing, charging stations is becoming increasingly crucial. We have introduced RFID (radio frequency identification) technologies in this research, which allows people to be automatically identified. Electromagnetic waves are used to transmit and receive information from users in this technology. With an increased number of Electric Vehicles (EVs) on the roads, charging infrastructure is gaining an ever-more key role in addressing the needs of both the local distribution grid and EV consumers at the same time. As part of the smart charging platform that supports charge monitoring and control, this study presents a mesh network RFID system for user identification and charging authorization. The IOT-based mesh network RFID provides a cost-efficient solution to identify and authorize vehicles for charging.

Keywords: RFID, Electric Vehicle, Micro Controller, Charging Station.

INTRODUCTION

Over the past few years, Electric Vehicles (EV) have gained importance because of their appeal as a credible alternative to gas-powered vehicles. With electric vehicles (EVs) projected to become a major mode of transportation in the future, there has been much debate about their adoption, notably among legislators. EVs, on the other hand, require a charging station that allows them to "recharge" their batteries in the same way that gasoline-powered vehicles do. While EVs are pollution free, the electricity used to charge their batteries may be drawn from traditional power plants, decreasing their appeal as an environment-friendly mode of transport. Many countries currently use coal, oil and natural gas for its energy. Fossil fuels are non-renewable; they bring on finite resources that will become too expensive or too environmentally damaging to retrieve. Solar energy is never exhausted since it is constantly replenished.

Solar energy is renewable energy and it is mostly called "clean energy" or "green power" because it doesn't pollute the air does not result in carbon emission. There has recently been a push to create solar-powered EV charging stations that generate clean electricity. Our paper is all about the charging station design, working and uses with the disadvantages of the system . Every station is composed of a plug that becomes attached to a vehicle, supplying it with electric power to charge the vehicles. Solar-powered EV charging stations present a great opportunity to greenify our transportation needs, making electric vehicles end-to-end environmentally positive. With the reduction in solar costs and improvements in solar efficiency building, solar-powered EV charging stations present a great opportunity to greenify our transportation needs, making electric vehicles end-to-end environmentally positive. Charging stations are also called electric vehicle supply equipment and are provided in municipal parking locations by electric utility companies.

Currently, the deficiencies of the electric vehicles are the cost of buying and operating the vehicle and also the limited distance capacity of one-time charging. Within the next few years, Electrified vehicles are destined to become an important component of the transport field. Therefore, the charging infrastructure should be developed at the same time. Among this substructure, Charging stations PV-assisted are attracting a substantial interest due to increased environmental consciousness, reduced cost and rise in efficiency of the photovoltaic module. As the number of EVs on the roads increases, charging stations in both parking structures and private garages are likely to become more prevalent. The distribution grid, EV owners, and parking structure operators will all have standards that these stations must meet. User authorization, authentication, and payment are just a few of the many activities these charging stations will do for security and financial reasons.

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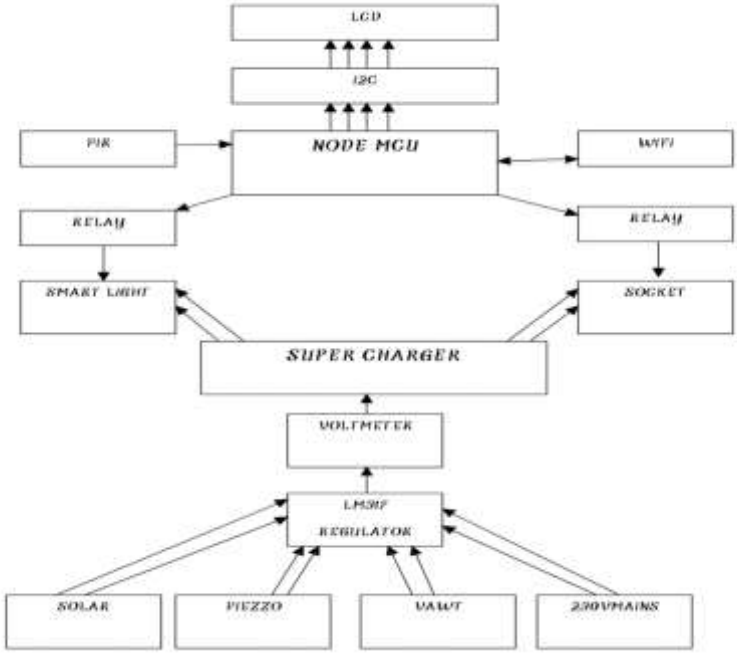

CONCLUSION

This paper is really useful, and it will be required in the future when gasoline and diesel are no longer available. If we generate the electricity using solar, wind energy and piezo buzzer then it will be total green energy system. The feature includes a solar-powered workplace charging station for electric vehicles, which provides a sustainable mode of mobility. In this paper dynamic charging for solar energy powered EV charging station is investigated.

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