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Automatic Device Charger Using Adding Money

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ABSTRACT :

The "Automatic Device Charger Using Adding Money" project offers a user-friendly and secure method of smartphone payment. The project meets the urgent need for a secure and accessible payment environment by combining coin-operated, personal locker with password-protected access and tamper detection. Users can add funds to access the payment site for a certain period of time while their devices are still protected by the lock. Protect incoming calls with password entry. The Arduino microcontroller controls the system, including tamper detection. The results and discussions show the value of this project and its potential to increase the convenience and security of payments and instruments. This project proposes and automatic device charger utilizing a money adding mechanism facilitate convenient charging services the system integrates a secure payments interface where users can add credit to their accounts using various payment methods. Upon connecting their device to the charger, the system deducts the appropriate amount based on the charging duration or energy consumption. This automated approach streamline the charging process, offering users a hassle-free experience while ensuring efficient utilization of charging resources.

INTRODUCTION:

Development of smartphones and convenient electronic gadgets has changed our every day lives by giving consistent and helpful network. But the expanding reliance on these gadgets required arrangements that are not as it were open but too security-critical. The coin-operated programmed gadget charger venture is a spearheading reaction to this alter. In an age where individual information and advanced security are vital, this extend offers coin-operated installment terminals, password-protected individual gadgets and apparatuses centered on giving arrangements to meet these needs whereas progressing client involvement. With the appropriation of versatile innovation, we have get to to consistent and secure gear the require is expanding. Clients in open places, schools or businesses anticipate installment offices to be simple to utilize and dependable. But this comfort regularly comes at the cost of security, as clients are hesitant to forsake their gadgets on a normal premise. The coin worked programmed gadget charger framework tackles this issue by combining the usefulness of coin-operated with the peace of intellect of individual bolt. The inquire about investigates the complexities of this unused framework outlined to illuminate the require for both contraption installment and gadget security, giving non-compatible arrangements and trusting the world's compulsion to portable gadgets. In today's fast-paced world, request for helpful and open charging arrangement for electronic gadgets is ever-increasing. Conventional charging strategies regularly require strategies to carry their possess chargers or discover accessible control outlets, which can be badly designed and time-consuming. To address this challenge, the concept of programmed gadget charger with a built-in cash including component developed. This imaginative framework points to give clients with a consistent charging encounter whereas advertising a helpful installment strategy for getting to charging administrations.

PROBLEM STATEMENT

1. Inconvenience of a Traditional Charging Methods:Current charging solutions often require users to carry their own chargers or find available powers outlets, which can be inconvenient, especially in public places.

2. Lack of Accessible Charging Facilities: Accessing charging facilities in public spaces like airport, café or shopping malls can be challenging, particularly without readily available payment method.

3. Complex Payment Procedure: Traditional payment method for charging services may involve manual transactions or the need for physical currency, adding complexity and inconvenience to charging process.

4. Resource Ineffiiciency: Without an efficient payment mechanism, charging resources may be underutilized or monopolized, leading to inefficiencies and longer wait times for users.

5. Need for Seamless Integration: There is growing demand for charging solutions that seamlessly integrated services with convenient payment mechanism, streamlining the user experience and promoting efficient resource utilization.

OBJECTIVES:

1. Develop Automated Charging System: Design and implement automated charging system capable of providing charging services to various electronic devices

2. Ensure User Convenience: Prioritize user convenience by creating a seamless charging experience, where users can easily connect their devices and initiate charging without need for additional accessories or complicated procedures.
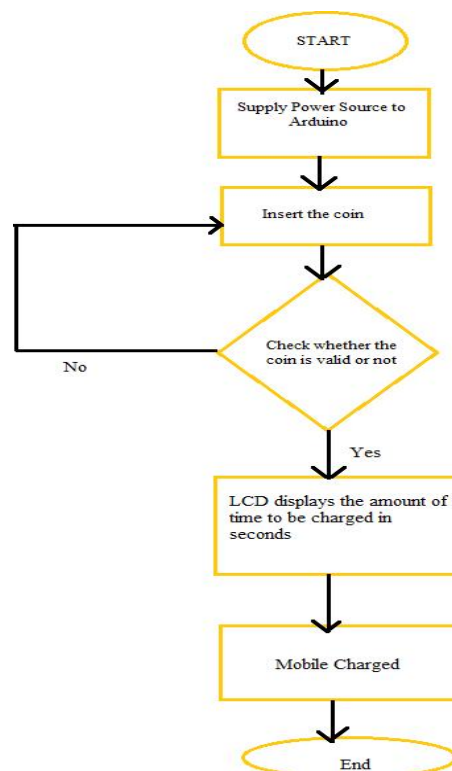
LITERATURE REVIEW:

Various studies have explored the integration of payment systems into charging infrastructure to facilitate convenient and seamless transactions for users. Research as examined implementation of diverse payment methods such as mobile payments, RFID-based system, and prepared accounts to simplify the charging process and enhance user experience. Understanding user acceptance and behavior towards automatic device chargers with integrated payments mechanism is crucial for the successful deployment and adoption of such system. Studies have investigated factors influencing user preferences, trust, and satisfaction with charging solutions, highlighting the importance of user-centric design and usability consideration. Literature has addressed security and privacy challenges associated with payment transaction and personal data in automatic device chargers.

Research proposed encryption techniques, authentication protocols and privacy-enhancing technologies to safeguard user information and mitigate risks related to unauthorized to access or data breaches. Researchers have explored have strategies for optimizing charging services and resource allocation in automatic device chargers. This includes studies on demand forecasting, dynamic pricing models, and energy management technique to improve operational, reduce waiting time, and ensure equitable access to charging resources.

PROPOSED METHODOLOGY & OPERATING PRINCIPLE:

The three pins of coins sensor are connected with Arduino board. One pin is connected with pin 2 in Arduino and other 2 pins are connected with the positive and negative terminal of the battery. Once the coin is inserted into coin sensor, it validates the coin and sends signals to the Arduino. The Arduino will send signal to LCD 16*2 display. The LCD display amount of time to be charged. Then the battery on the number of valid coins. If the coin is invalid then the LCD displays a message as "PLEASE INSERT THE 5Rs. OR 10Rs. COIN".

BLOCK DIAGRAM:

Working diagram and performance of machine :

FUTURE SCOPE:

1.   Integration with digital payment methods such as mobile wallets and cryptocurrencies for seamless transactions.

2.   Incorporation of AI algorithms to optimize charging efficiency and predict user behavior for better service.

3.   Implementation of renewable energy sources like solar panels to power the chargers, promoting sustainability.

4. Introduction of smart features like remote monitoring and control via mobile apps for convenience and security.

CONCLUSION:

The implementation of an automatic device charger with a payment mechanism offers a seamless and convenient solution for user requiring on-the-go charging services. By integrating user-friendly interfaces, robust control systems, and secure payment methods, this system addresses the increasing demand for accessible charging solutions in various environments. This technology not only streamlines the charging process but also promotes efficiency and accessibility, allowing users to conveniently charge their devices while on the move. Additionally, the incorporation of payment mechanism ensures fairness and sustainability, enabling the system to operate autonomously while maintaining profitability

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