MOBILE CHARGING USING DIGITAL TRANSACTION

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***Abstract*— In this era of technological advancements, mobile phones became a part of people's daily activities. Where access to normal charging is not access ible, a need for cell phone charging is always present. Mobile charging using digital transaction machines are designed to solve this problem. Our objective is to create and build a charging device that requires the user to insert their phone into a slot and verify that it is available before using it. After the payment process charging is done. This device is quick and simple to place outside of any commercial building. E.g: Railway Station, Airports, Hospital, Bus stand, Shopping Malls, etc.**

Keywords--*Charging Machine, LED display, Arduino UNO.*

1. INTRODUCTION:

Cell phone is the perfect way to stay connected with the others and it provides a sense of security. The importance of mobile phones is increased in recent years and for this charging become the major issues like many times the battery becomes dead in the middle of the conversation, unable to contact in case of emergency, unable to use navigation features or GPS, unable to use internet and camera.

Therefore, this project is designed which provide charging to our mobile phones. It provide charging anytime and anywhere and its cost friendly people can use in Case of emergency, it is suitable for more types of mobiles as there is different types of slots are available for different mobiles and it is made such that its time effective. Initially we insert the mobile for checking the availability. After that we pay for the requirement what we want. Also an emergency charging slot will be provided separately which will cost a little higher in price as compared to the normal chargeamount.

2. LITERATURE REVIEW

To predict the variation in capacity for batteries in different mobiles and variation in time for particular battery is difficult task. As usual we see that MI phones get charged (100%) even in 1hour or less than that, But if it uses another type of charger it takes more time. Hence for this we should have a different technology for different type of mobiles. For example some mobiles support wireless charging, so by doing this machine can consume less space and high technology.[1]

The main components which used in this device is LED Display for the displaying purpose. If we plugged-in the mobile into the charger it will check the Voltage Required for charging, Available charge, Required charge, Duration for charging, Amount for the charging. GSM is used for the connectivity between the mobile device and charging machine. Digital multimeter is used to measure the voltage capacity of the mobile device. Arduino microcontroller is used to connect the hardware and software. Rectifier is used to convert the AC voltage to DC voltage for the charging purpose. SMPS is an efficient and effective source of power.

It is a device in which energy conversion and regulation is provided by power semiconductors that are continuously switching “on” and “off” with high frequency.[2] Transformer is used to Step down the voltage for the charging machine. Batter is used for back-up purpose. If there is no power, it uses the charge stored in the battery.

A device which gives a particular amount of charging to a mobile phone by the help of coin consumption. It is purely based on Solar power.[5] The components in this device are IR transmitter which is used to transmit or emit the infrared rays into the device.IR receiver is used to listen the IR rays which emits from IR . SCU (Signal Conditional Unit) is used for determining Which signal is listen from the IR receiver depending on that which work has to bedone it decides.[4] 555 timer is a circuit which is used for inversing the time so at 00.00 the charging will stop.

3. EXISTING SYSTEM

Coin Operated Cell Phone Power Charger, it is a device in which both grid power and solar power is used. This system is useful to save energy from sun and intelligent tracking solar energy. Also having Low power consumption. Use of sun energy is essential at that time so this solar activated system is also essential in today’slife. This system is particularly significant throughout the summer season with its long days of sunshine readily available to capture and no energy will be lost.

In rural areas electricity is not available all time but communication is one of the needs of people, so this solar based mobile charger helpful for those areas. In this proposed system the coin recognition is also one of the important parts. MATLAB is used for avoiding coin duplication. So this system is useful from all ways

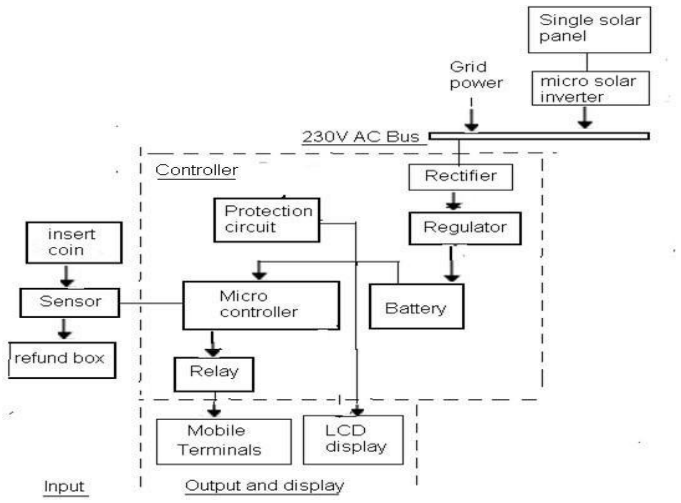

Fig: Block Diagram of Exiting System

4. PROPOSED SYSTEM

Problem Statement

The mobile phone became an absolutely necessary part of a day-to-day life, and has spread in the rural and urban population areas as an essential for communication. Nowadays mobile phones battery requires charging frequently. Many times a battery becomes drain in the middle of conversation particularly at inconvenient times when access to a standard charger is not possible. Mobile charging using Digital Transaction machines are designed to solve this problem.The user have to plug the mobile phone into one of the slot and pay for the required amount the phone will then be given a digital signal for charging and provide charging to it.

Aim and Objective

Aim: Facilitate the user by providing charging with the help of digital transaction.

Objectives

- Distraction in communication because of unavailability of charging in mobile batteries can be avoided using this machine.
- It can be easily installed anywhere outside the business premises.
- Suitable for more mobiles as there is different slots for different mobiles.
- Especially gives benefit to rural areas where grid power is not available for all the time.
- Cost friendly.
- Comparison of Existing system with Proposed system
- Working of the Proposed System

Digital Transaction

Proposed algorithm

Step 1: Start
Step 2: Turn ON the machine. LED glow to indicate that the machine is activated.
Step 3: Insert the mobile into the charge plug
Step 4: Check the battery level availability, duration of charging, required charging.
Step 5: Pay the amount for charging purpose
Step 6: LED display shows the remaining battery, time taken for charging.
Step 7: Charging automatically stopped as time goes to 00:00
Step 8: Once the charging is completed and user want more charging then go to step 5.

Step 9: If the results are satisfied then turn OFF otherwise repeat step from 2 to 7.
Step 10: End

Comparison with existing system:

- ✓ Proposed system is more secured than the existing system.
- ✓ It also has a more number of slots for charging purpose.
- ✓ Proposed system contains emergency slot, but in existing system there is a limited slots only.
- ✓ Existing system accepts only coin for the transaction, In proposed system it uses digital transaction

5.CONCLUSION:

Hence, we are successfully designed and understand the need of our proposed system and the condition of environment in which the product is to be released. All the previous research and existing system gets reviewed and drawbacks of these systems can solve in our proposed system. All the designed models are built successfully. The products give benefit to the users as well as it is profitable for the developer also in the mean of money. It works specially for rural areas where mobile phone is a basic need and they do not effort high capacity mobile battery phones.

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