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A PATH FOR HORIZING YOUR INNOVATIVE WORK

A REVIEW ON NOTE TO COIN EXCHANGER

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Abstract- A maximum power point tracking algorithm is absolutely necessary to increase the efficiency of the solar panel as it has been found that only 30-40% of energy incident is converted into electrical energy. Due to the growing demand on electricity, the limited stock and rising prices of conventional sources (such as coal and petroleum, etc.), photovoltaic (PV) energy becomes a promising alternative as it is omnipresent, freely available, environment friendly, and has less operational and maintenance costs. Therefore, the demand of PV generation systems seems to be increased for both standalone and grid-connected modes of PV systems. This paper proposed the perturb and observed MPPT method using Arduino.

Keywords:- Photovoltaic, maximum power point tracking (MPPT).



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INTRODUCTION

Requirement of coins in a day to day transaction at places like bus station, railway station, mall and park is the main motive of designing an efficient and simple machine which will fulfil need of coins for transactions so that people will not face problem of coins. This project will provide coins for note, for this purpose we have developed mechanical coin dispensing model which takes the note inside and checks whether note is fake or real, if note is real camera takes picture of it. After that it will find out its value using image processing technique and then according to the value equivalent number of coins are dispensed. In this way we are trying to design an efficient machine which will be having low production cost as compared to other existing machines. In this project we have developed a MATLAB algorithm for image binarization to detect the value of note. And we have implemented a fake note detection unit using UV LED and photodiode.

In today's world due to increase in the value of money the term coins or cent rarely have a value that it use to have in the earlier days. In the olden days, the value of Coin was much more than what it is today. Even a single rupee used to mean a lot. Even we can remember our childhood when our parents use to give a 25 paisa or 50 paisa coin as a pocket money. Due to ever increasing market, growth in production there was a drastic change in the lifestyle of the people of the society. The market saw an increased in value of currency due to the term 'paisa' started losing its self-respect. Nowadays people prefer note over coin just because coins make one's purse a bit bulky. Also one feel uncomfortable will carrying coins. As a matter of fact today people have changed their mentality about coins which is acceptable. This is because carrying a 10 rupee note is preferable than carrying ten coins of 1 rupee. Also coins tend to make a lot of sound which can be irritating for someone. Such people face problem when they go out in the market.

In our day-to-day life people come across with the problem of not getting change at various public places such as railway stations, malls, bus stations etc. People find it very difficult to get denomination at such places. This results in frustration. Suppose you purchased ticket which cost five rupees and you give a 10 or a 20 rupee note at the ticket counter. The person asks for a change and you don't have it, what will you do? Then you go around looking for a change at the station and you don't get it. At that time either you leave the change at that counter or sometimes you are forced to purchase certain things those are unnecessary for you at that time which results in wastage of money.

Literature Review

In February 2015, Dhananjay A. Sabale says that Now a day the requirement of coins in our day to day transaction at public places such as, shopping malls, railway stations, multiplexes, bus station, and parking places, even in rural areas where nowadays coin telephone system is Used, and many more is increasing rapidly. The main motive of designing this efficient and simple machine which will fulfil need of coins for transactions. In olden days the value of coins was much more than what it is today. Thus the system is designed so far that the people will not face problem of coins in public places. This project will provide coins for note of respective value, for this purpose we have developed mechanical coin dispensing model which will accepts the note inside system and checks

whether note is fake or real, if it is found that note is real camera takes picture of that note. After that this will find out its value using image processing technique and then according to that value equivalent number of coins are dispensed from dispenser unit. Thus in this manner we are trying to design a robust and efficient machine which will be having a very low production cost as compared to other existing machines. In this system we have developed a MATLAB algorithm for image denomination to detect the value of a particular note, and we have implemented a fake note detection unit using Ultraviolet LED and photodiode terminology.

System Design

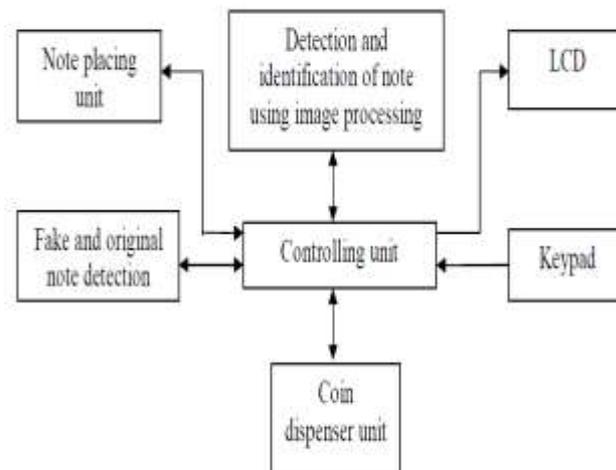


Fig: - 1. Block diagram of Note to Coin Exchanger

Methodology

Commonly used methods to detect Counterfeit currencies are,

I. Watermark

In Indian banknotes contain the Mahatma Gandhi watermark with shade effect and multi-directional lines in the watermark window.

II. Latent Image

On the obverse side of Rs.20, Rs.50, Rs.100, Rs.500 and Rs.1000 notes, a vertical band on the right side of the Mahatma Gandhi's portrait contains a latent image showing the respective denominational value in numeral. The latent image is perceptible only when the note is held horizontally at eye level.

III. Micro lettering

This feature appears between the vertical band and Mahatma Gandhi portrait. It contains the word „RBI“ in Rs.10 and Rs.5. The notes of Rs.20 and above also contain the denominational value of the notes in micro letters. All these features can be seen well under a magnifying glass.

IV. Optically Variable Ink

This is a new security feature incorporated in the Rs.500 and Rs.1000 notes with revised colour scheme introduced in November 2000. The numeral 500 and 1000 on the obverse of Rs.500 and Rs.1000 notes respectively is printed in optically variable ink. The colour of the numeral 500 and 1000 appears green when the note is held flat but would change to blue when the note is held at an angle.

V. See through Register

The small floral design printed both on the front (hollow) and back (filled up) of the note in the middle of the vertical band next to the Watermark has an accurate back to back registration. The design is appeared as one floral design when seen against the light.

VI. Serial Numbers

Every Indian banknote has its own serial number and it is more important to check whether the image is captured using webcam and the coordinate of the pixel in 2D image is given by the first and second index of the array in gray scale intensities for each coordinate. Each element of array stores an unsigned 8 bit integer (0-255). The limit of first two indices of array determines the resolution of the image. In our current scenario, this limit is set to be 640 for the first index and 480 for the second index.



Fig: - 2

The currency notes should be of good quality i.e. they are not very much full of stains. The gray scale image is operated with various segmentation operators of which canny is the best. Then the numbers of white and black pixels are counted at a particular area and are compared with the reference values and then the note is identified. One more parameter is been added that the image of entire note will be taken and depending on it the user has the option of selecting number of coins of Re.1, Rs.2 and Rs.5 coins he wants.

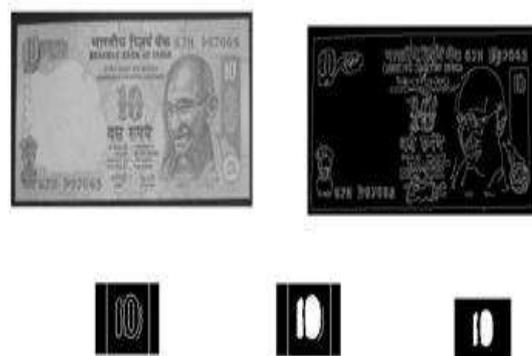


Fig: - 3

VII. Coin dispenser unit

After inserting the note, the note goes through various tests like detection of original or fake note, detection of 10 or 20 rupee note and then controller will ask the user about the choice of coins. Based on user's choice indications are given to the driver IC to drive the respective motors and the motor will rotate in such way that it gives desired no of coins. Coins of 5, 2, and 1 are stored on the cups which are mounted on a conveyor belt. We have used a switch at the edge in order to give indication to the controller that the exact number of coins is given.



Fig:-4 Coin Dispenser Unit

5. Conclusion

The proposed system will be useful in day to day life of every common man where people have to suffer for change at many public places. As mentioned in the applications this project is a real time application which is much lighter, portable, low power, faster and with security. The system can be easily equipped to identify foreign currency. We tend to make it

available at as many places as possible and people do not have to worry about carrying coins.

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