

**COIN SORTER AND COUNTER**

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**Abstract**

Counting and Interpret currency coins with accuracy and high speed is a challenging problem for banks and stores, and even consumers. In this proposed work, a coin operated machine which can differentiate between coins accurately and automatically is implemented. An automatic coin counting and sorting machine prototype is developed by using ARDUINO-UNO as the main controller. In this proposed work, a coin operated machine which can differentiate between coins accurately and automatically is implemented. An automatic coin counting and sorting machine prototype is developed by using ARDUINO-UNO as the main controller.

**1. INTRODUCTION**

A coin sorter sorts a different collection of coins into separate bins. Coin sorters are specific to the currency of certain countries, as the countries are issuing same sized coins for different value. Most of the coin sorters are armed with a screen which displaying the number of coins or the value of the coins that are passed through the machine. A “coin counter” refers to a device which sorts and counts coins simultaneously, or it only counts presorted coins which are of the same size. A coin counter of presorted coins uses a bowl which has a flat spinning disc at the bottom, which is used to distribute coins around the perimeter of the bowl. The

opening at the edge of the bowl can accept only one coin at a time. The Coins can be either passed through a light-beam counter, or spring-loaded cam which only accepts one coin at a time. A coin counter's good standard is that it has a counting speed of 300 coins per minute. Separating, sorting and counting coins of the same is an activity that demands accuracy, security and reproducibility. When people have to separate, sort and count coins for multiple currency species, they have to be manually separated before identifying and counting the coins. In this project, coin sorting is done based on coin dimensions, coin is identified and counted by infrared sensor

and maker nano. The count will be displayed on LCD display.

## 2. RELATED WORK

A coin sorter is a device which is used to sort random collection of coins into separate bins for various denominations of coins. Coin sorters are specific to the currency of certain countries since different currencies often distributes similarly sized coins of different value of coins. In this paper, three specific versions of coins have been taken and sorted according to its dimensions. The coins are inserted into a box, in which the slots are made for coins. Each coin falls in the specific slot which is detected by a Dual Channel Line Tracking Infrared Sensor. The sorted coins are counted by Maker NANO board, which has been programmed to count the coins that falls under the specific slot. Thus, the coins sorted and counted by this process. This system can be used in places like banks, retail shops for easy coin sorting.

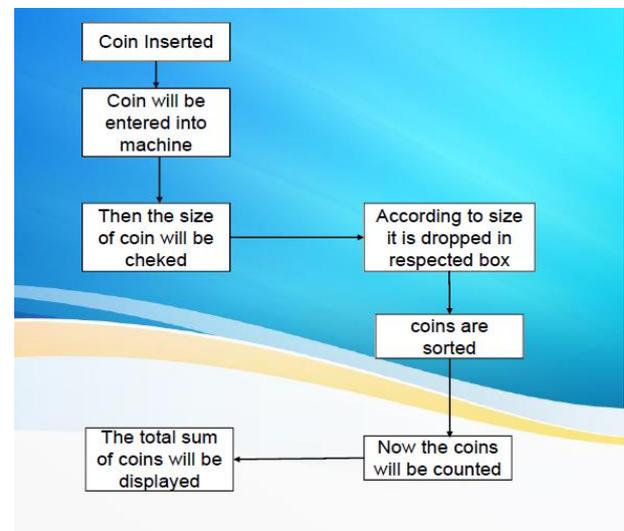
## 3. IMPLEMENTATION

Here, IR sensors are placed at different output paths of the coinsorting to sense the coins. When a coin is inserted into thisAurdino coin counter,it enters the dedicated path as per themechanical design and the respective IR sensor senses the coin and gives HIGH output value to the Aurdino which can be readby the analog

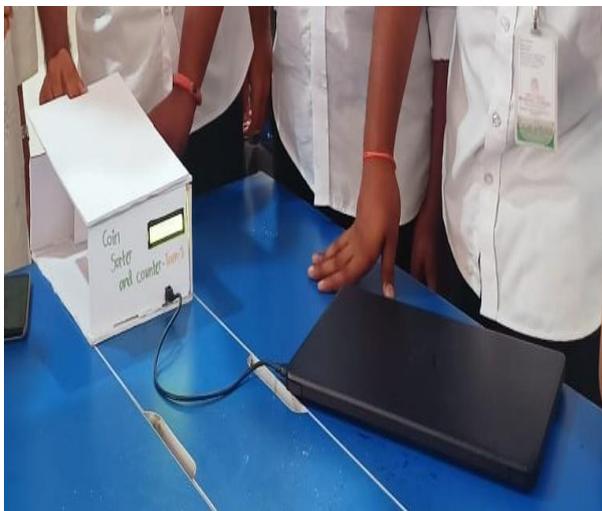
pins of Aurdino.The IR sensor which is giving

HIGH value like Rupees 2/5/10.Here a 16\*2 alphanumeric LCDis interfaced with Aurdino using an 12C module, to display thenumber of coins inserted into the box.This LCD can also beconnected to Aurdino directly without using the 12C module,But this requires more number of connections.So to make itsimpler,an 12C module is used along with LCD,which only uses

2 pins,i.eSCL,SDA for connecting LCD with Aurdino. Forpowering the Aurdino, a 12VDC, 1 AMP AC-DC adapter isused, which can be directly connected to the power jack ofAurdino.



## EXPERIMENTAL RESULTS



## 4. CONCLUSION

Although in the present time different types of machines are available for

counting notes, no such a machine is present to count coins. It's really a problem that the waste of valuable time in counting coins by human power. The speciality of our machine is it counts and sorts the coins after counting. The speed of our machine will be high compared to others. We believe that our machine will make a change in the problems related to counting of many coins and time taken for counting it. Manual method can be completely replaced by this proposed method. Time consumption in counting the coins is much reduced. It can be specifically used in temples. The proposed model can separate coins and estimate them.

## 5. REFERENCE

- [1] "Machine vision-based coin separator and counter" by Prashanna Rangan R, STM Journals, STM Journals, Volume 5, Issue 1, 2018
- [2] "Coin counting and sorting machine" by Prof. Anupa Kavale, Prof. Shraddha Shukla, Prof. Prachi Bramhe, 2019, 9th International Conference on Emerging Trends in Engineering and Technology - Signal and Information Processing [ICETET-SIP-19]
- [3] "Coin detection and recognition using neural networks" by S. Mohamed Mansooroomi, R.B. Jayanthirajee, 2015, International

Conference on Circuit, Power and  
Computing Technologies[ICCPCT]

Society for Mechanical Engineering  
International Congress, June 2016

[4] "Study on Automatic sorting and counting machine for coin" by Liai Pan, and Qiulei Du, vols 427 - 429 (2013) pp 872-875 (2013), Trans Tech Publications, Switzerland

[5] "Automatic South African Coin Recognition through Visual Template Matching" by TharishSooruth, MandlenKosi V. Gwetu, 2018, IEEE

[6] "Indian Coin Recognition System of Image Segmentation by Heuristic Approach and Hough Transform (HT)" by C.M.Velu and P. Vivekanandhan, Int.J.Open Problems Compt.Math.,Vol. 2, No.2, June 2009.

[7] "Indian Coin Detection and Sorting using SIFT Algorithm" by Rohan.S.Prabhu,Sahil.G.Khorjuvekar , Akshat.G.Poi, VaibhavNaik, IJSTE - International Journal of Science Technology & Engineering, Volume 2, Issue 10, April 2016.

[8] "Coin Sorter Electrical Control System Design" by Qixing Liu, International Conference on Education, Management and Computer Science (ICEMC), 2016.

[9] "Real Time Recognition and Counting of Indian Currency Coins using Machine Vision: A preliminary Analysis" by Keyur D. Joshi,Vedang D. Chauhan, and Brian W.Surgenor, Proceedings of The Canadian