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A Work Paper on Automatic Parcel Sorting and Delivery to Section

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Abstract: ***In manufacturing industries, there arises a need to sort parcel. The parcels may be of similar or different types. The system should be able to detect the parcel and then differentiate the parcel from each other based on their sections. Thus, different parcels and different conditions require different type of processing. Our aim is to scan the QR code attached to parcels using QR code scanner. The input QR code will be processed for detecting the given sections. This automated system does not requires any special human intervention and thus reduces the probability of human made errors. The result of the system are completely reliable which can be further used with huge working systems.***

Keywords: Raspberry Pi 3b, web camera, SD card, Arduino Uno, Servo motor.

I. INTRODUCTION

This project is about scanning a QR code of a parcel and sorting as per their sections.In manufacturing industries, there arises a need to sort parcel. The parcels may be of similar or different types. The system should be able to detect the parcel and then differentiate the parcel from each other based on their sections. Thus, different parcels and different conditions require different type of processing. Our aim is to scan the QR code attached to parcels using QR code scanner. The input QR code will be processed for detecting the given sections. The results of the system are completely reliable which can be further linked with large working systems.



Img :existing system in industry

II. LITERATURE SURVEY

In order to know in detail about this survey the previous research work done in this direction. The literature survey is done in chronological order from 2000 to 2015. Several studies dedicated the topic were referred.

P. A. Viola and M.J. Jones, has stated that they have worked to develop a method for detecting QR codes in arbitrarily acquired images. Once the QR code is detected, the camera holder can be used to correctly frame the QR code. They are interested not only in detecting the code, but also in determining the size and position of a QR code in an image. In addition, they detected the QR code to allow real-time applications.

Prof.. Vishal dunawade, Omkar jakate, Prasad .V. Yadav, Maqsood Ahamadghori, Vaibhav Kattikar has discovered a system that can be deployed in the organization that requires necessary verification of a stock. This process requires assets scanning either using RFID or BARCODE. But they proposed system which verifies 1 parcel/ sec. Similarly upon calculation it is found that it takes just 1 and half hr for verifying.

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Stephen hehir and Ruud pikaar has invested a new parcel network, including new sorting system. With safety as a key culture pillar of the corporation,safety was comprehensively consider from a initial scope of the future parcel network.
They worked on validation, verification, design and implementation of new parcel sorting system. Their case study states speed of a action and focuses on human factors ergonomics to reduce manual handling risk.
Sanjay Prakash Dabade, Rohan Prakash Chumble designed automated sorting machine using conveyor belt which they in need manufacturing industries in many fields which shows the concept of normal conveyor belt with some intelligence, as it as ability to sort the objects of a different size. They used field programmable gate array (FPGA). The object of different sizes are passed through the sensor and the object having specified size is sorted. By developing such a sorting system the production rate of the manufacturing industry has been increased since thus sorting system replaced the human resource. Also the accidents in manufacturing factories can be prevented because the uses of operator in manufacturing floor had been reduced.

A. Existing System

The verifier has to carry the parcel till the scanner. Existing system requires courier boy to sort the parcel as per the sections .It is both time consuming and error prone. Hence it is necessary to develop a system which can save both time and efforts by mankind wireless parcel sorting and verification.

B. Proposed System

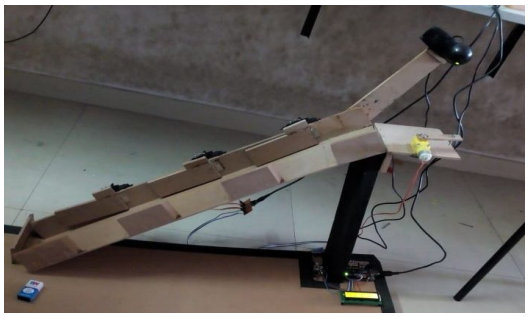
The verifier has to put the parcel one by one on the scanner. The QR code of the parcel will be scanned automatically and sorted according to their sections. Sorted parcels will fall into respective container.

III. IMPLEMENTATION

Automatic parcel sorting is a project in which all the parcels are scanned, sorted automatically and delivered the section.8 megapixel Webcamera is used to scan the QR code of the parcel.After scanning the QR code address attached with QR code is send to Raspberry pi 3B+ through the signals.Raspberry pi reads QR address and send signal back to Arduino controller.Arduino controller sends signal to respective servo motor to which address parcel belongs. Arduino controller send signal to the DC motor.After receiving signal DC motor rotates in 100 rpm.LCD is attached with Arduino to count number of parcels arrived .After that parcels are delivered as per to their section .

IV. RESULT ANALYSIS





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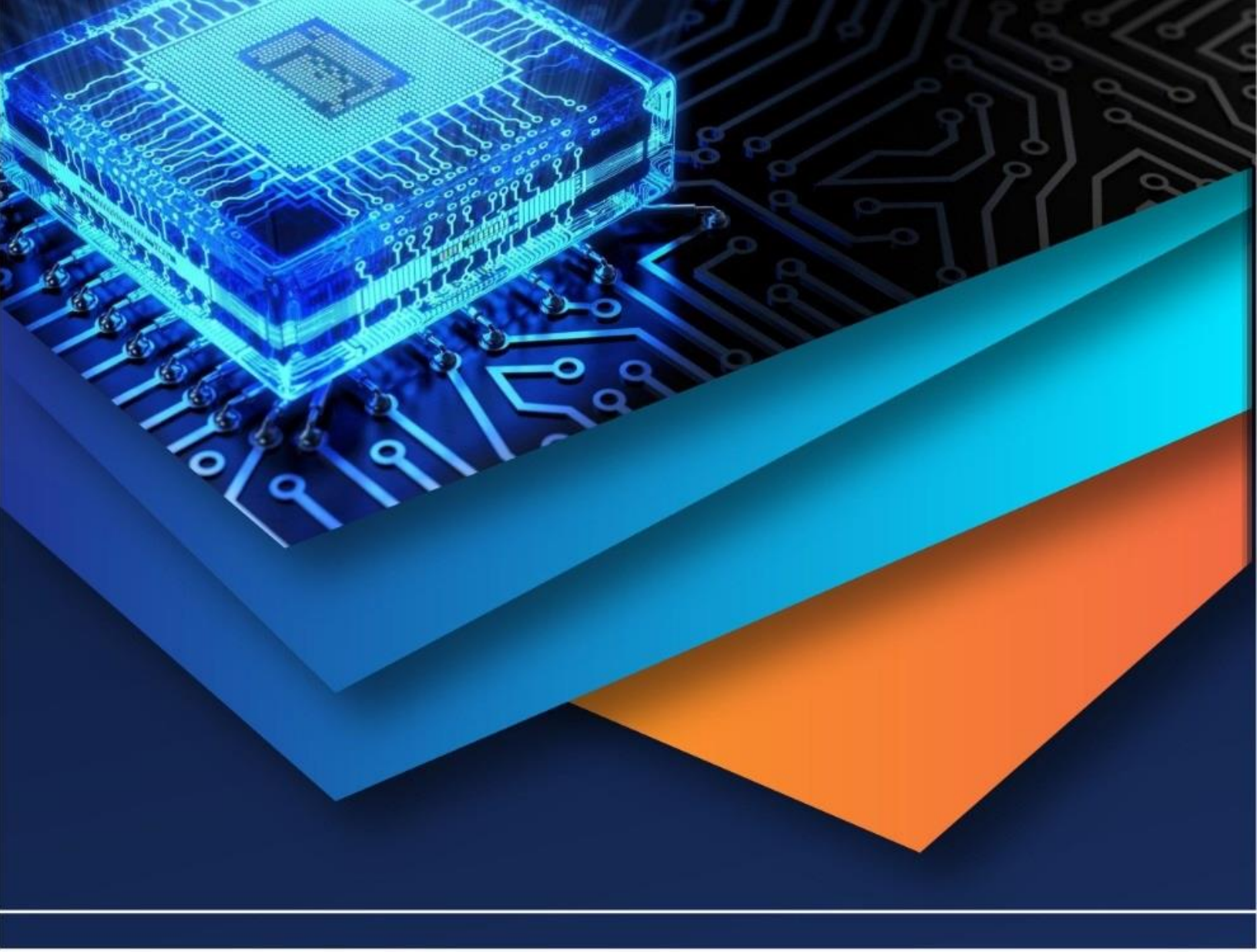
V. CONCLUSION

Hence the automatic QR code scanning and parcel sorting machine should be developed which will reduce time and human intervention and which will be useful in manufacturing industry, courier service etc.

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