

BOTTLE MONITORING USING CAMERA AND SENSOR

DR.V.S.CHAUDHARI; MISS.PRIYANKA GHARAT;MR.RIZWAN SHAIKH;MISS.JASWANDI BHAGADE
ELECTRONICS AND TELECOMMUNICATION DEPT.ARMJET,SAPGAON,SHAHAPUR

Abstract-

The enlargement of Indian food industry is an even matter of fact. The beverage industry is at its peak. So looking at the pre-availing conditions it is very crucial to design an error free system. The aim of this project is to develop a system that will monitor the bottles in refrigerator or container. This is made possible with the help of cameras and sensors. This project will help us to reduce human efforts and increase the efficiency of the system. This project is made with the help of aurdino , camera , load cell , lcd panel. The visual basic software is also used. This system will monitor the bottles in refrigerator or container using the cameras. The load cell is used to sense the weight of bottles. This process is based on IOT. The weight of bottles in the container is sensed and the monitoring is done using cameras. The major goal of this project is monitoring the bottles and informing us as per the availability. If there is space for bottles inside the refrigerator then the system will inform us and it will be displayed on the lcd display.

Introduction-

Indian food industry is perched for huge growth. There are many soft drink industries in the market. So it is important to take care of quality and quantity of the product. To maintain the quantity of

Problem Statement-

In the earlier system as the humans were used to monitor the bottles the accuracy was less.Also the cost of workers was high.If there is any problem in

large number of bottles is not easy job with manual inspection. In the vision based automated system the cameras is used for monitoring system. Earlier humans used to monitor or check the availability of bottles in the refrigerator or enclosed container. But when it comes for industrial purpose it is very difficult task. It needs a huge man power. The Atmel AVR microcontroller is also used. With this system that operates automatically, every process can be smooth and the process can reduce workers cost and operation time. The system operates by the program that is designed to do the operation. The number or weight of the bottles is compared with the reference number or weight that is fixed in the software. The IOT is the network of physical devices,vehicals,home appliances and other items embedded with electronics,software,sensors,actuators and network connectivity which enables these objects to connect and exchange data.Each thing is uniquely identifiable through its embedded computing system but is able to inter-operate within the existing internet infrastructure.The IOT allows objects to be sensed or controls remotely across existing network infrastructure,creating opportunities for more direct integration of the physical world into computer based systems and resulting in improved efficiency,accuracy and economic benefits in addition to reduced human intervention.

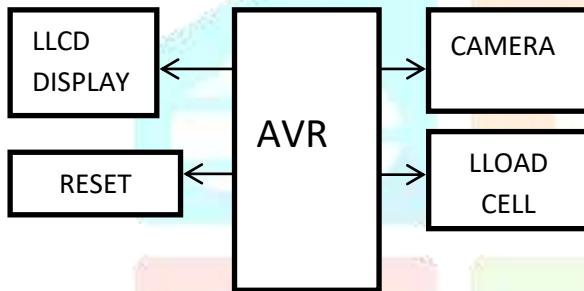
the observation then the whole system gets disturbed.Also if there is absence of observer then the system gets disturbed creating a huge loss for the company. This increases the man power and efforts required for inspection purpose. So, to

overcome this problem the fully automated system will be the best option to overcome all the above problems and monitor the bottles.

Present Scenario-

The present system available is based on weight and human monitoring. This increases the man power and human efforts. A time to time inspection is necessary for perfect working of the system. The problems related to the existing system are that only the weight of bottles in the refrigerator is detected rather than space and the weight of bottles may vary according to the quantity of bottle.

Proposed System-



The above is the block diagram of the proposed system. It consists of Atmega AVR micro controller, lcd display which acts as output element, load cell, power supply, camera. A reset is

Applications-

It is used for inventory control of bottles consumed by the customers.

It can be used for object monitoring process.

Future Scope-

By using the storage device we can record the process captured in the cameras.

By using the GSM module we can observe the process from anywhere.

used to reset the load cell to zero level. The above system is the modified version of the existing system. The additional element used here is camera which is used here for monitoring purpose. This system will reduce human efforts thereby reducing man power required. This is totally automated system which is best option to be used in the beverage industries. This will also be used to maintain the quality and quantity of the products. The cameras will monitor the bottles in the refrigerator and the load cell will sense the weight of bottles and if there is space in the refrigerator then it will be displayed on the lcd display and informed the user. And depending on the weight limit and space in the refrigerator the user can insert bottles in the refrigerator. This system can also be used to monitor other objects and can be named as object monitoring.

Hardware Used-

Lcd display, cameras, crystal ,atmega AVR microcontroller, load cell, RS232 cable.

Software Used-

Keil V3, multisim ,arduino Ide, visual basic software.

We can also implement the same system using image processing.

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