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Warehouse Stock Security for Inventory

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ABSTRACT

In many companies cost of material forms a major part of the selling price of the finished product. Stock requirement planning is very difficult to understand for the good operations of any organization because shortage of material can terminate the shop or production line or lead to modification of production schedule. In order to efficient manner control the inventory and to find out suitable attainment policies a MADM approach is used. In this paper, AHP is used to determine the toll of the criteria selected through knowledgeable opinion. The proposed stock of item model classifies the materials into twenty-seven composite classes. The Safety Stock of the each class of material is limits through CSS formula. To show the proposed model safety stock of the selected classes of the materials is determined and compared with the real value.

Keywords: Analytical Hierarchy Process (AHP), Multimedia Analysis and Data Mining (MADM), Cascading Style Sheet (CSS), Interactive Voice response System (IVRS) Dual Tone Multiple frequency (DTMF).

I. INTRODUCTION

To a great extent logical strategies for inventory management and control which the study provides by hiring simulation approaches will go a long way in assure optimization of inventory policies. The spirit of this work there in would be better conveyed in its application to real world inventory challenges. In specific terms, the model can be easily implemented in spare parts/service parts/motor manufacturing companies/industries for the purposes of: the management of the inventory system in such a manner that goods services (repair or replacement) are met. This would check the incidents of lost sales as customers would not encounter any type break time and lost production capacity. Knowing the service level of a specific order class as well as the fill rate and the total number of backorder of demands and using that information to check complexity of spare parts. Certainly the structure of the organization of study by itself hinder service isolation of demands thereby creating an environment where rationing can be applied. Thus, the approach in this research is to integrate rationing to the current practice of the organization with three order classes isolated by their order lead-times.

The inspiration in taking this resemble is that the researcher believes it will result in better system interpretation given certain service level requirements. Consideration was made to orders from the transport organization as the highest precedence(*Gold*) class, failure and maintenance orders from the maintenance section as the medium priority (*Silver)* class while orders from external customer as the lowest priority *Bronze* class. The researcher also created two static threshold levels in order to model a single location system facing the considered Poisson arrival rates for the classes. The Gold class has null lead time whether the Silver has a shorter but positive lead time than the bronze equivalent. However, the proposed simulation of a Model-Driven Decision Support system would integrate the 7 (continuous review, one to one lot, service differentiation, backordering, demand lead time, threshold rationing and clearing mechanism) spare parts inventory policies with refilling lead times inclusive so as to find the fill rates as well as the total number of backorders for the demand classes. This is because the knowledge of the fill rates (probability of

no stockout) and the rate at which demands are backordered can help the organization to divine the finest parameters for inventory.

II. METHODS AND MATERIAL

1. Proposed Methodology

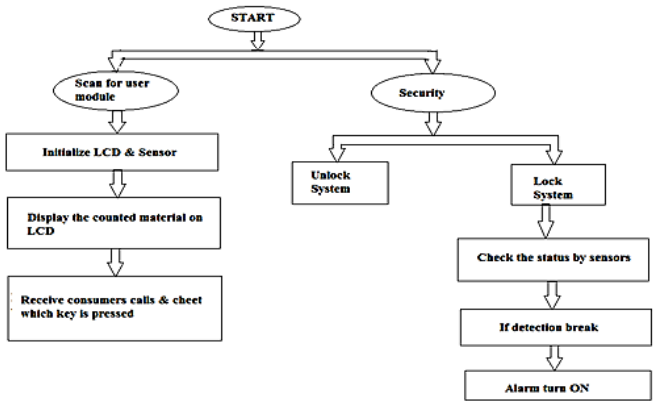

Figure1. Proposed Methodology.

We are going to use facility like customer care service. so that workers or anyone can check available stock just by dialing number. when he/she wants to check stock of 20cm they have to press 2,if about 30cm they have to press 3,etc like that .for providing this facility we are going to use MT8870 DTMF decoder .we are going to record available stock with the help of APR 9600 voice module. Both are interact with each other through our programming. We will control all this operations with the help of PIC microcontroller, which is heart of our system.

2. Working

Below figure 2 shows the functional block diagram of stock management system.

In this project we are using ultrasonic sensor to measure the stock. The store will be displayed on the LCD. Moreover when warehouse manager is not there he can lock the system so if someone tries to remove the component from the shelf an alarm is sounded. The keypad is used to lock the system the system can be unlocked only from the PC.

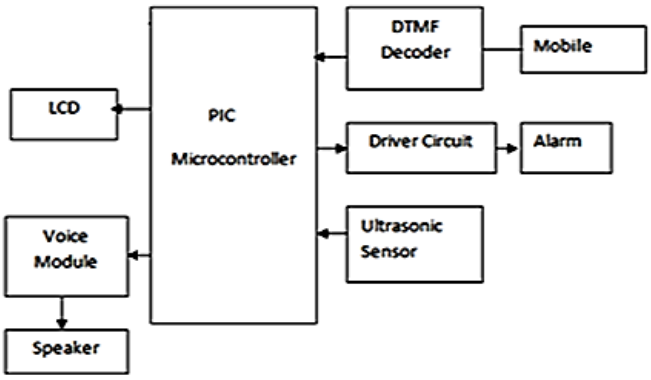

Figure 2. Block diagram of our system.

An ultrasonic sensor is used to count the number of products available in the stock. The EEPROM is used to save the stock value in case of power down.We are also interfacing mobile via DTMF technology so anyone in the company can call and check the status of any stock so we do not need to contact the warehouse manager each time we want to know if a stock is available. All you have to do is call the given number the call will be automatically picked up and an IVRS based system will guide you and give you details of the stock.

- Ultrasonic sensor automatically measure the available stock without any physical contact.
- The measured stock will be display on the LCD.
- There is no need to call warehouse manager every time, anyone can call system and get detail information of stock.
- The call automatically pick up by using DTMF via mobile.
- Then the IVRS system will give detail information.
- Warehouse manager lock the system when he is not present there, at that time someone tries to stole the stock the alarm is sounded.
- The system can be lock and unlock so the security is provided.

III. RESULTS AND DISCUSSION

This system operates in two modes:

A. Active Mode.
B. Passive Mode

A. Active Mode

When power supply is on supply unit gives 5v dc output.it is applied to the voice module,

microcontroller, DTMF and ultra sonic sensor,lcd display.ultrasonic sensor counts sheets and display it on lcd as shown.When call arrive at stock room It is automtically pick up and answering mode.as per demand availability of stock will be known to a called party.

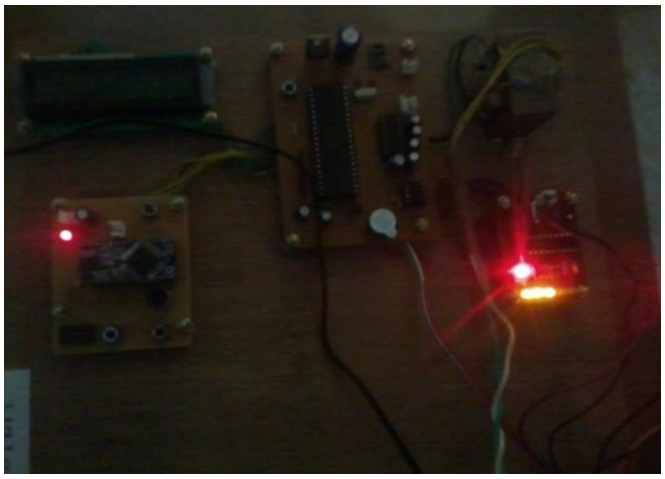

Figure 5. Circuit working in active mode

B. Passive Mode

In this mode circuit is in off state.

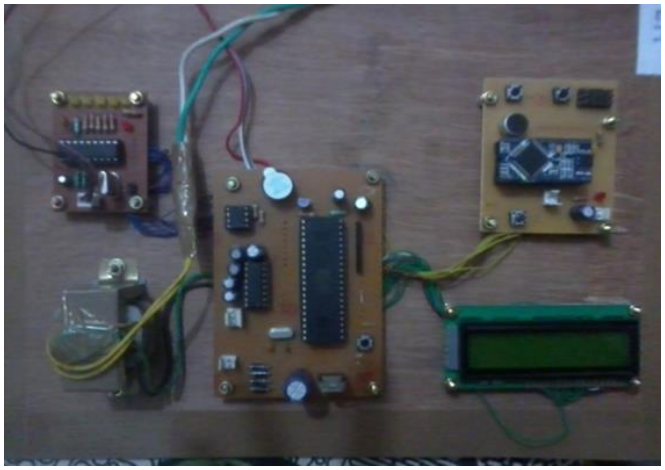

Figure 4. Circuit working in passive mode

IV. CONCLUSION

In this system lots of time will be save. Here we go for automated system. Our system can able to count number of sheets available without manual support also it will maintain record of it. All counting of sheet will carry out with the help of sensor. We will use HCSR04 ultrasonic sensor for counting purpose. Counting of sheets by sensor is based on distance sensing. So no need to again and again to warehouse to check what is available stock is.

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