

# Automatic Material Distribution System in Ration Shop

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**Abstract** - Open Distribution System proportion item dispersion is set up by the legislature of India to circulate basic supply things at reasonable cost. The disputable issue in this framework is pirating of products and late conveyance of merchandise. This is on the grounds that in the current framework all the work is done physically. With a specific end goal to defeat this, we have proposed a plan to mechanize the circulation of item in the proportion shop. A database kept up by the administration which is gotten to by the proposed framework. The database contains the points of interest of individuals in a region and the amount of item apportioned to them. Because of this unlawful passage are stayed away from. The LCD will show the client points of interest and the rundown of item accessible for them. On choosing the item will naturally measure the item and dispatch the item. All these are mechanized utilizing Arduino. Because of this manual work in the proportion shop is supplanted by the mechanization.

**Key words:** *Arduino, Microcontroller, RFID, Pump, Load cell.*

## 1. INTRODUCTION

Open Distribution System proportion item dispersion is built up by the administration of India to appropriate basic need things at reasonable cost. The questionable issue in this framework is sneaking of merchandise and late conveyance of products. This is on account of in the current framework all the work is done physically. With a specific end goal to beat this, we have proposed a plan to computerize the appropriation of item

in the apportion shop. A database kept up by the administration which is gotten to by the proposed framework. The database contains the subtle elements of individuals in a territory and the amount of item allocated to them. Because of this unlawful passage are maintained a strategic distance from. The general population can get the item by embedding's a savvy card number with his OTP. The LCD will show the client points of interest and the rundown of item accessible for them. On choosing the item will consequently measure the item and dispatch the item. All these are robotized utilizing microcontroller. Because of this manual work in the proportion shop is supplanted by the computerized installed framework. By utilizing this frame work the significant issues like pay off, sporadic circulation and different challenges looked by the destitute individuals. Unlawful exercises in the apportion shop can be enormously diminished by this strategy. The item landing is suggested to the general population so it encourages the general population to spare their opportunity by not holding up before the proportion shop. The circulation procedure is mechanized utilizing microcontroller thus the administration offices contact individuals legitimately. The debasement and payoff is the real issue in proportion item dissemination which can be abstained from utilizing this framework. The modernized database kept up keeps away from wrong passage of the item by the authorities and gives verified transportation and dispersion.

EXISTING SYSTEM

It consists of RFID, GSM & Finger print verification the total quantity is send to all the card holders' mobile number through GSM. The quantity can be controlled by using timer.

PROPOSED SYSTEM

The proposed system the smart card will be read by RFID tag reader. Ones, the information given in smart matches means the quantity of material can be entered and customer can collect those materials. In any case, in the framework having downsides is weight of material might be wrong for that in the proposed framework to redress that issue we are utilizing load cell.

BLOCK DIAGRAM

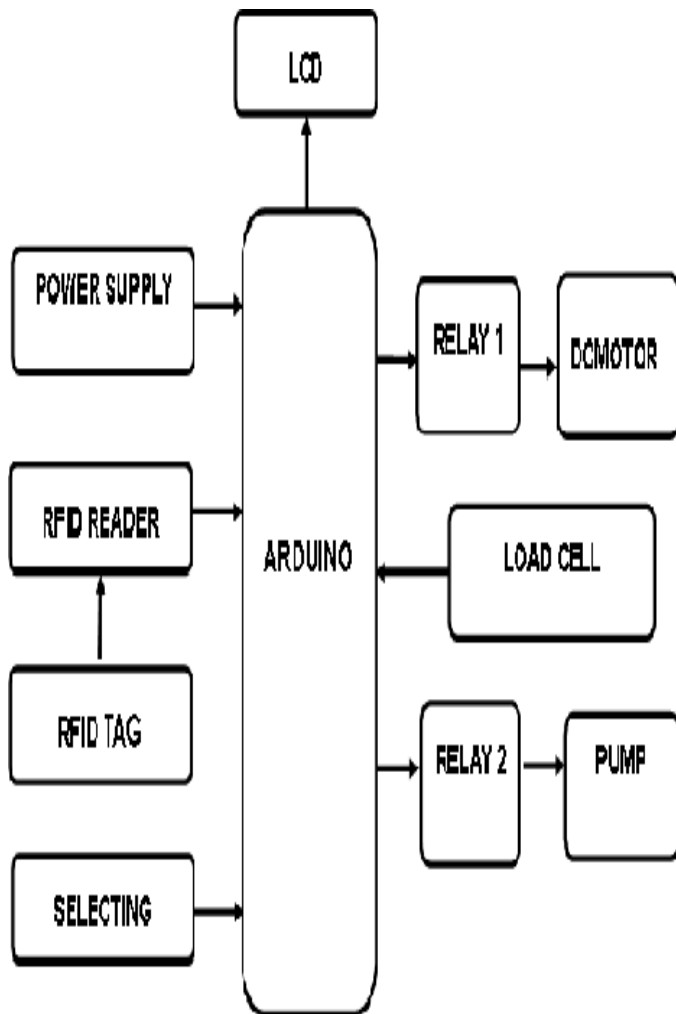


Fig 1. 5 Block diagram

Microcontroller

The clock signal to microcontroller is given by 16 MHZ crystal oscillator. ATmega 2560 is based on mega 2560 microcontroller board . It has 54 digital input/output pins, 16 analog inputs, 4 UARTs, a 16 MHZ crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button.

Power Supply

In our project, the input control is given by the controlled power supply here; the 230v AC input is given to the transformer to 12V and is encouraged to a rectifier. The yield from the rectifier is a throbbing DC voltage. so we need to change over it into unadulterated DC voltage, the output voltage from the rectifier is sifted to evacuate any AC segment display even after rectifier now, after rectifier output will be given to a voltage controller in order to consistent dc voltage.

2. PUMP

A pump is a gadget that moves fluids like kerosene, oil in order to pump some material in the signal pump work by some system and expend vitality to performed mechanical work by moving the liquid. Pump is utilized as a part of framework for controlling the stream of Oil. When purchaser chooses Oil and its amount, pump exchanged on by transfer hardware. The ON time of pump relies upon chose amount of lamp oil, sugar, rice. the pump offers quick and safe exchanging. more administration life, great medium similarity of the material utilized, low control power and minimized outline.

RFID READER

EM-18 RFID peruse module utilizes a RFID peruse that can read 125 KHz labels. Along these lines, it can be called as a low recurrence RFID peruse. It gives out a serial yield and has a scope of around 8-12 cm. There is a worked in radio wire and it can be associated with the PC with the assistance of RS232.EM18 module emanates out 125 KHz through the loops. At the point when a 125 KHz RFID latent tag is purchased to the field module will get invigorated from the field. By the adjustment in balance current through the loops, the tag will send the data back to the program memory exhibit.

### RFID TAG

RFID tag is nothing but ID frame work. It utilizes radio recur recognizable proof give alert signal. A RFID labeling framework incorporates the label itself, a read/compose gadget, and a host framework application for information accumulation, handling, and transmission.

### RELAY

The relay is an electronic switch which is used to turn ON and OFF the circuit. switch it on with a modest current and it switches on another apparatus utilizing a considerably greater current. Why is that helpful? As the name proposes, numerous sensors are fantastically delicate bits of electronic gear and deliver just little electric streams. However, regularly we require them to drive greater bits of mechanical assembly that utilization greater streams. Transfers cross over any barrier, making it feasible for little streams to enact bigger ones. That implies transfers can work either as switches or as intensifiers. Here the relay is used to turn on of the pump and load cell.

### LOAD CELL

A heap cell is a type of transducer which is used to electrical flag. The purpose of load cell is to measure the Wight of the product in the ration shop. The heap cell is mainly used due to good reverberation estimate and it also have good long life cycle in several applications. These heap cells are especially firm, have great reverberation esteems, and have a tendency to have long life cycles in application [2].

### LCD DISPLAY

The usually utilized 16x2 LCD show uniquely crafted characters, numbers, letter sets, and extraordinary characters. Here the LCD display shows the material name and it quantity.

### 1.6 FLOW CHART

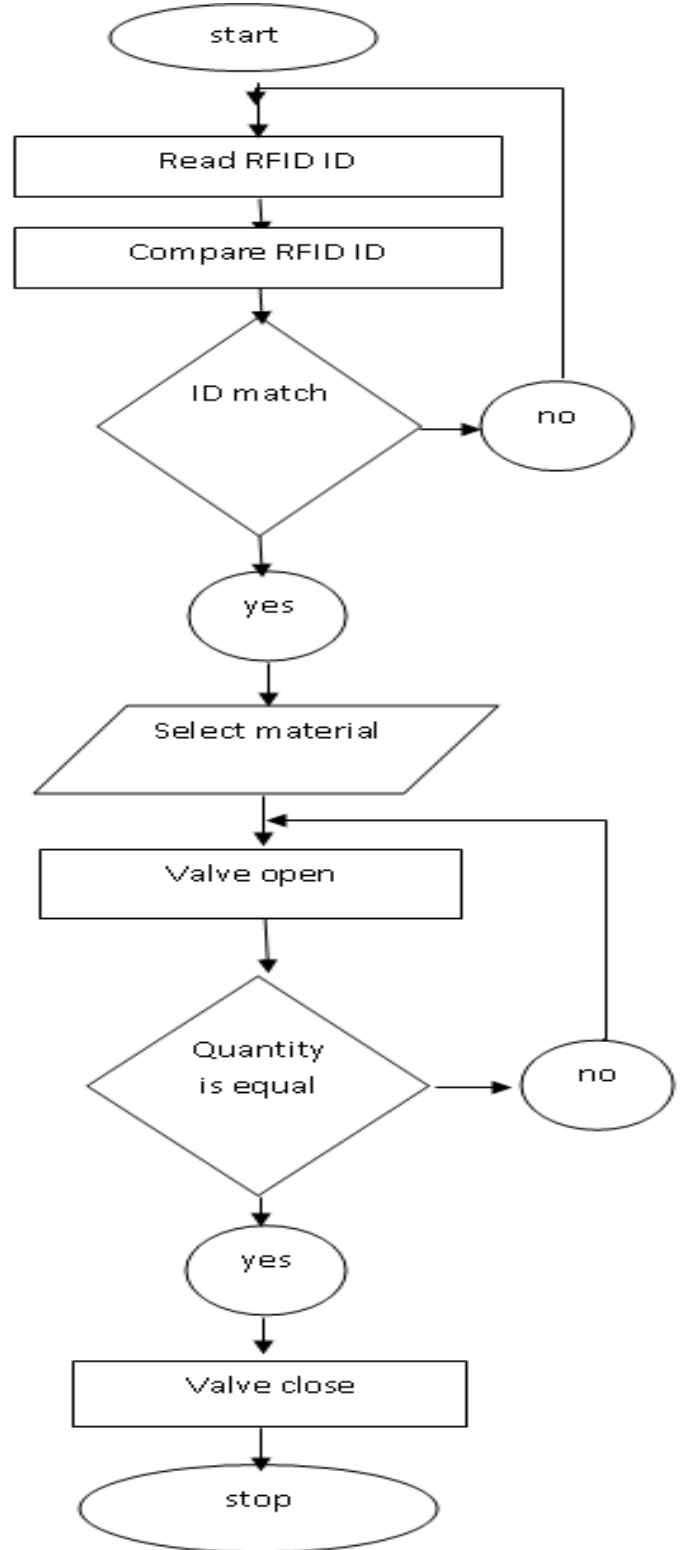


Fig 1.6 Process flow chart

### CONCLUSION

By using this system, the major problems like bribery, irregular distribution and other difficulties faced by the poor people. Illegal activities in the ration shop can be greatly reduced by this method. The product arrival is intimated to the people so it helps the people to save their time by not waiting in front of the ration shop. The distribution process is automated using microcontroller and so the government facilities reach people properly. The corruption and bribery is the major problem in ration product distribution which can be avoided using this system. The computerized database maintained avoids wrong entry of the product by the officials and provides authenticated transportation and distribution.

### REFERENCE

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