Milk Pouch Vending Machine

[1] Prof Whatte Abhinav, [2] Shrinidhi S.W., [3] Rutuja M.P., [4] Sohel S.S., [5] Shubham A.S

[1][2][3][4][5] Marathwada Mitra Mandal's College of Engineering, Pune, India

Abstract--- In today world everything is going computerized and all the machines are brilliant and has higher efficiency than human. And in the long run machines are more profitable than humans. Today everyone uses gadgets and follow technology. In the dairy product world, India is the world's biggest producer and consumer of dairy Milk production totals 140bn liters a year. But in milk dispersion it is found that in numerous regions people go to milk store, in the pinnacle time of morning and night which cost them their precious time. They have to wait in long line hanging tight for getting milk from milk man or milk store. And in this covid situation it is very hard to go buy milk, wait in line, and buy the milk. This present dissemination arrangement of the need to change due to taking some time in top occasions, thus to keep away from the above issue, here we propose a method to overcome above challenges and given a gadget framework. Customers mainly buys milk from or nearby milkman with cash. In this proposed framework work with RFID card based rather than genuine paper cash. The milk disseminated by distributing the gadget according to client milk necessities. The milk pouches will be dispersed by machine according to client milk necessities.

Index Terms— VCR, Solar PV system, Simulink, Aspen Hysys v11

I. INTRODUCTION

In the modern day everyone using cards to pay the bills in the malls, hotel etc. to avoid carrying cash & wasting the precious time.

But in the milk centres there is big question about card system to collect milk because of there is no card payment. So to avoid interaction with a person and waiting for paying money a microcontroller with RFID reader used in the milk centers. The microcontroller senses the need and acts as the program inserted by the manufacturer, it is easy and helps people to have milk at any time they want. To eliminate human interaction a card system is used. This system is RFID reader and RFID tags which are used by customer in the centers which has to be rechange so, it can be vended milk without human interaction. In this day (covid-19), we can use milk vending machine (RFID Reader). can be help to estimate the human interaction. It is safe to use and very easy system all people are use it.

II. LITERATURE SURVEY

1. **Design for Unmanned Milk Vending Machine Using RFID Card System**.
Satya Manoj.S1 Mr. Manikandaswamy.S2
2. Iot Based Automatic Milk ATM Machine for Rural Area People Vijayaragavan.
M, R. Rajendirakumar, R. Nakkeeran.
International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9 Issue-4, February 2020
3. **Case Study on Different Vending Machines**
Asmita P. Bodhale1, Prof. J. S. Kulkarni2 1ME Student,

E&TC Dept., Pimpri Chinchwad College of Engineering Pune, Maharashtra, India 2Assistant Professor, E&TC Dept., Pimpri Chinchwad College of Engineering Pune, Maharashtra, India.
International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056 Volume: 04 Issue: 04 | Apr -2017
4. A Review Based on Milk and it's Vending
M. H. Manmohan1 , N. B. Ankitha2 , G. Aishwarya3 , Kumbhar Trupti4 1,2,3UG Student, Department of Electronics and Communication Engineering, Sambhram Institute of Technology, Bengaluru, India 4Assistant Professor, Department of Electronics and Communication Engineering, Sambhram Institute of Technology, Bengaluru, India
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III. OBJECTIVE OF THE PAPER

As we are moving towards technology, we need to upgrade in every aspect so that everyone could cope up with it. Some of our objectives will be:

- Hygienic and environmentally friendly products;
- Easy to use.
- Minimal space requirements
- Low operational costs
- Automatic control over the temperature conditions of product storage
- Automatic notification system for the technical condition and quantity of product

IV. COMPONENT REQUIRED

I. Arduino:

Arduino Uno is a microcontroller board based on the ATmega328P (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator (CSTCE16M0V53-R0), a USB connection, a power jack, an ICSP header and a reset button.

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output activating a motor, turning on an LED, publishing something online.
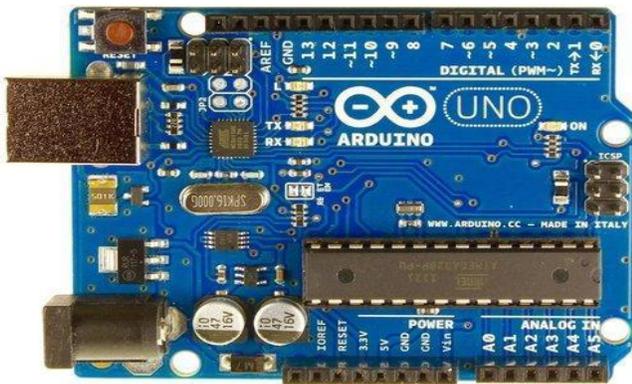
FIG-1

ii.Transformer: The transformer is a normally working alternate supply, in this system we used 230 V/12-0-12 V, 500 MA range. Initially 230V input supply given to the transformer and it converts in output by 12 V AC supply. The normally transformer function converts energy from one side to another side without changing their frequency.

iii.Rectifier: The function of rectifier converts output transformer, AC voltage into DC Voltage. Here used IN4007 type of diode used for rectifier purpose.
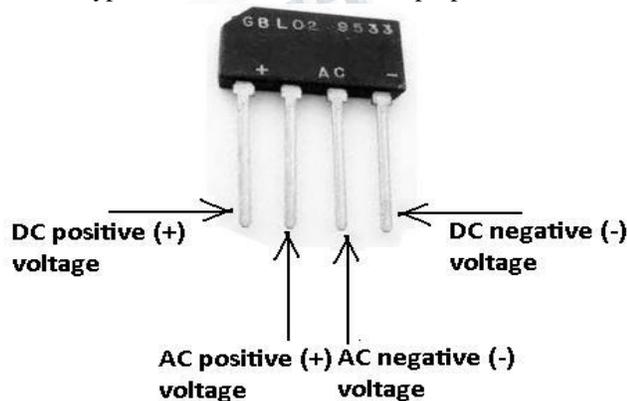

Fig-2

iv.Regulator: Voltage regulator generally needs to balance the output voltage of the devices. Here we used IC 7812, this IC 7812 accept input DC voltage range from 13 V-35 V and convert fixed 12 V output Range.

v.IR sensor: Infrared sensor works basically specific range of light source in the infrared spectrum. For low distance we can use infrared sensors, for higher distance and more accuracy use sharp infrared sensor. The basic infrared sensor having two major parts one is transmitter another one is received.

vi. Crystal Display: In this proposed system we used Liquid crystal show 20×4 Right here Liquid crystal display used for showing to be had water quantity, accesses individual name details, purchaser stability info motive, milk available information and so forth.

vii. Radio frequency identification (RFID) card: The main function of Radio frequency identity card reader is to read the purchaser data from the magnetic strip and validate the quantity to be had, transitional details and so forth. All characteristic works automatically. This magnetic tag stores information in virtual layout mode.
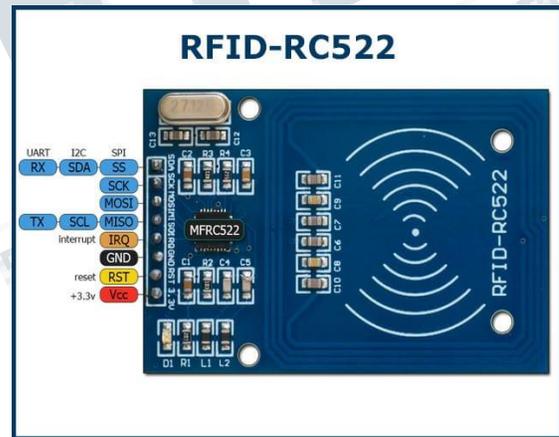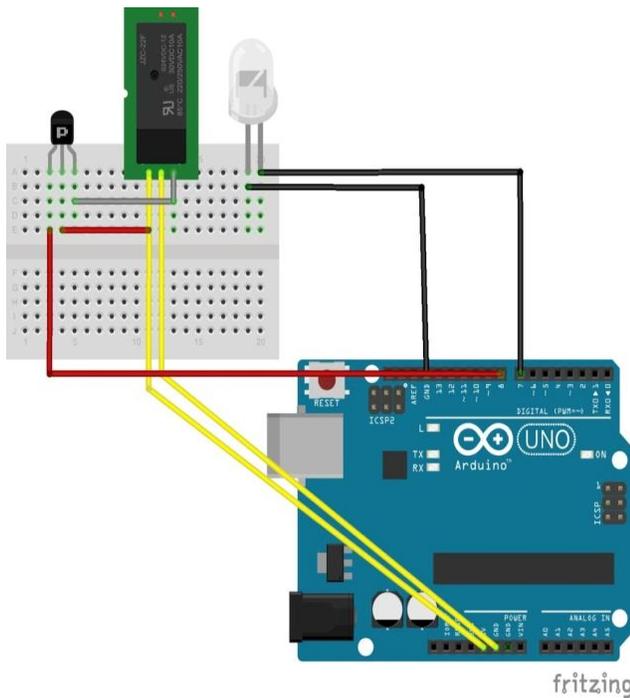

Fig-3

V. WORKING

In the working measure working parts Control of RFID522 to Aterno UNO R3 and Servo motor (5V to 7V) to Arduino UNO R3 L293D Pinout.

c) working & connections of RFID522 and ARDUINO UNO R3

Components: -

a. Arduino UNO R3

b. MFRC522 Module (RFID)

c. Arduino IDE

d Jumper cables

Fig-4

Fig-5

Connection diagram
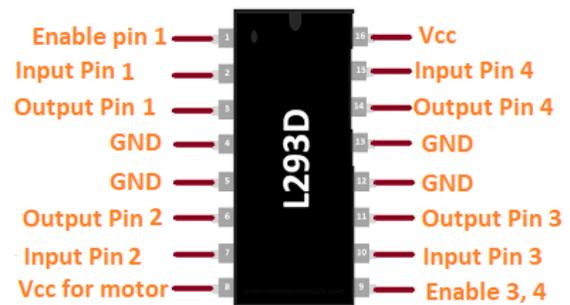**Connections** –
CRFID522 to Arduino UNO
MOSI-PIN11
MISO-PIN12
SCK- PIN13
SS/SDA-PIN10
RST - PIN9
LED-PIN7 and GND
Relay -Vcc Connect to 5V pins & collector Pin of the TIP33
GND-GND

Working: Plug Arduino board to computer and Select the board then upload sketch(code).Open up serial monitor and set baud and sen the all cards. After that it can work with Scan the all cards and this card data until Stored in the board. It can catch or scan only those cards Connection of Drive the DC servomotor with an Arduino and the L293D motor driver:
Components.
a. Arduino board.
b. Micro USB cable
c. L293D motor driver
d. DC motor
e. bread board
f. Arduino IDE and Jumper cables.

Connections

- Start by plug in your Arduino in power Source (computer).
- Connect GND pin and 5v pln on the Arduino to the one side of Breadboard & extend other side with Jumper cables.
- Place the L293D in centre of Breadboard with half of the pins on with other side.
- Connect 5V to enable1, Vss, and Vs on the L293D. Connect digital output pins to input1 & input 2 on the L293D.
- Connect your Arduino's GND to both GND pins on same side L293D.
- Finally, Connect output1 and output2 of L293D of your motor pins

Working:
When you can put a code in de s Arduino board servo motor work at given code system. First motor run the anticlockwise for 3 seconds after that break the motor for 1-2 seconds then Servo motor run 3 second in clockwise then it will break the motor system and stop.

VI. CONCLUSION

As the milk vending machine will be a huge turn over for the companies and the people will be treated equally as everyone can access the machine. Milk supply around this area can be equally distributed through these vending machines. Only the needed amount of milk can be taken from the machine and can avoid milk wastage. Payment can be made easier and simpler. These types of vending machines can be used for all sort of beverages and consumer products.

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