ISSN No:-2456-2165

Intelligent Multitasking System for Milk and Milk Tanker

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Abstract:- There is a need of real time monitoring system which will give the detail information about milk and milk tanker which will be transported from one place to another place. By this system will be able to monitor the status of valve of the tanker, and the temperature of the milk. Also we get the information about the milk level in the tanker. this system also able to detect the objects around the tanker. It consists of arduino, GSM module, DHT11 module, MAX232 module, relay driver, electromagnetic switch, solenoid valve, ultrasonic level sensor, IR proximity sensor and valve status sensor.

The temperature of the milk in the container will be monitored by DHT11 module. This system can easily detects the obstacles around the tanker with the help of IR proximity sensor and also owner get information about opening and closing position of valve by using valve status sensor and GSM module. This system operates with the aid of arduino, sensors, GSM module which will control the whole function of the system.

I. INTRODUCTION

Milk transportation is one of the essential part in day to day life. Villages contain no. of dairies which are connected to nearest milk centers. There are various problems we are facing while transportation of milk from one place to another. This project is an automated systems for reducing these problems. Also the system will provide a detail report on the milk loaded send to the receiver. This includes the temperature and quality. Many studies have been conducted in the field of milk quality and consumer satisfaction of the milk consumers. This system is introduced to avoid the misuse of milk during milk transportation. Many times milk gets stolen from the tanker. To avoid this problem we will check the status of inlet as well as outlet valve with the help of valve status sensor and owner gets the information related to switching of valve and temperature of milk through GSM module. Temperature of milk monitored with the help of DHT11 module. Obstacles around the tanker will be detected with the help of IR proximity sensor.

ISSN No:-2456-2165

II. BLOCK DIAGRAM

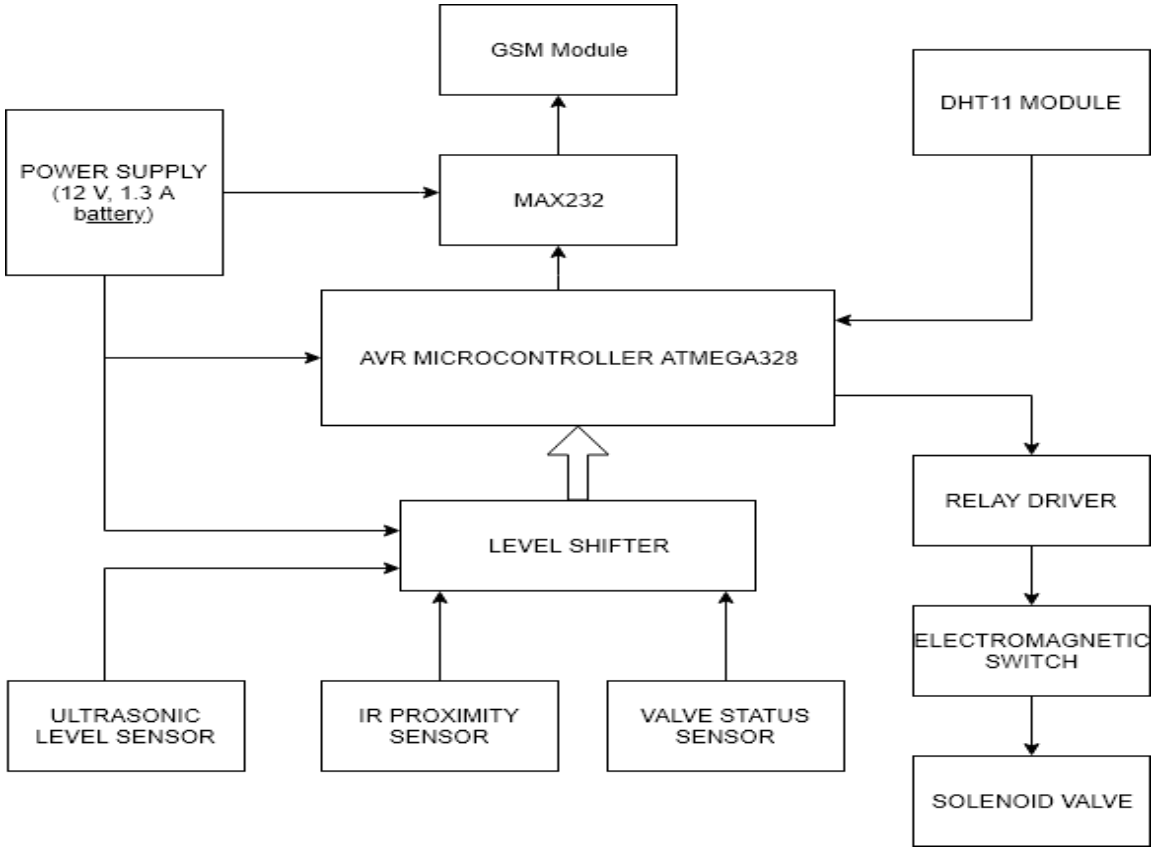

Fig 1:- Block Diagram of Proposed System

➢ *Block Diagram Description*

In our project we are using 89C51 micro-controller as CPU. For controlling section there is use of ATmega328 (Arduino UNO) controller. Also various sensors are interfaced with microcontroller through level shifter for monitoring

A. Arduino (UNO):

ATmega328 is a controller which is interfaced with sensors and modules for controlling and monitoring of milk and milk tanker.

B. Ultrasonic level Sensor:

Ultrasonic level sensor is used to measure level of milk in tanker. Ultrasonic level measurement is contactless principle and most suitable for level measurements of hot, corrosive and boiling liquids.

C. IR proximity sensor:

IR proximity sensor is a sensor able to detect the presence of nearby objects without any physical contact. Here, this sensor is used to detect any obstacle near the tanker.

D. Valve status sensor:

Valve status sensor is used to ensure accurate opening and closing of valves to control flow of milk in tanker.

E. DHT11 module:

The DHT11 is a basic, ultra low-cost digital **temperature** and humidity sensor. Here it is used to sense the temperature of milk.

F. GSM module:

GSM module is used to establish communication between a computer and a GSM system. It is used to send the actual position of tanker to the owner.

G. Solenoid valve:

Solenoid valve is a electromechanical device which offers fast and safe switching, high reliability, long service life, good medium compatibility of the materials used, low control power and compact design.

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III. FLOW DIAGRAM

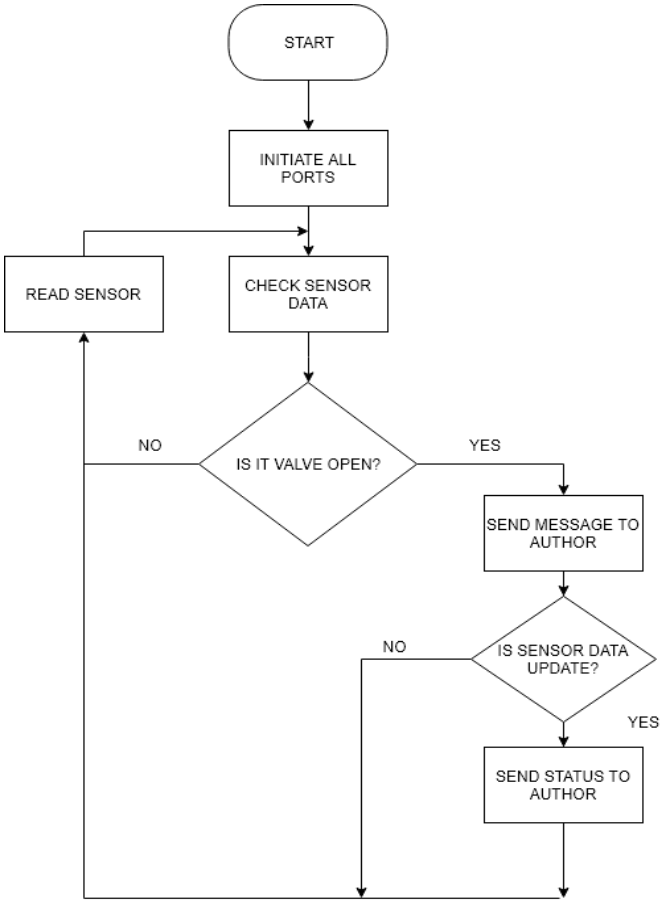

Fig 2:- Flow Diagram

IV. WORKING

In this project, ATmega328 microcontroller is used to control the system by interfacing with different sensors like ultrasonic level sensor, IR proximity sensor, valve sensor as well as DHT11 module and GSM module. Ultrasonic level sensor detects the level of milk present in the tanker and gives the information about level of milk to the owner. With the help of DHT11 module we can monitor the temperature of the milk. Valve status sensor checks the status of solenoid valve and give switching information of valve to the owner with the help of GSM module. IR proximity sensor detects the obstacles or nearby devices around the tanker.

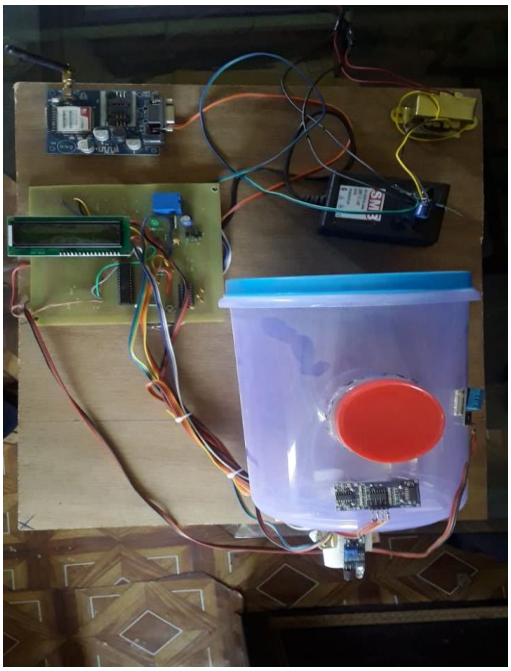

Fig 3:- Project Setup

V. CONCLUSION

In this project, ultrasonic level sensor, IR proximity sensor and Valve status sensor are used for level detection of milk, obstacle detection and cheaking the status of valve respectively. DHT11 module monitors the temperature of the milk present in the tanker. All information regarding to this system send through GSM module interfaced with microcontroller to the owner. To avoid misuse of milk and getting the information about milk and milk tanker to owner proposed system is useful.

REFERENCES

[1]. Design and development of GPS-GSM based tracking system.
[2]. I.J Intelligent system and application 2013 ,published online Aug 2013 in MECS (http://www.mecs.press.org).
[3]. Intelligent multitasking system for milk tankers. (www.ierjournal.org)
[4]. IoT based milk monitoring system ,International Journal of pure and applied mathematics ,volume 118. (http://www.ijpam.eu)