INTELLEGENT GOVERENMENT RATIONING SYSTEM

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ABSTRACT

Ration cards were provided to the public so that the person who is not able to buy the food can get food in low cost prize by the government. Today the problem of corruption at the Public Distribution Shop is a serious issue. The main reason behind corruption is that there is no control over this system. The system is completely run by the human beings; no automatic control is there, so all rights are directly given to the person running the shop. In this paper we are introducing an automated system that is used for controlling corruption. The system uses the Aadhar card for the authentication. With the help of character reorganization of the data stored on Aadhar card is transferred to the PC to make a data base. The interfacing of PC is done with ARM7 processor using RS232 cable. To make the system as a closed loop and to make a control over it the information of the activities being done at the ration shops is directly sent to the government by using GSM module by connecting it to the system to the system with RS232 cable. This will make it possible to make communication between the public and the government directly. This automation will surely reduce the corruption to some extent.

Keywords: Aadhar Card, Web Camera, GSM Module, AT Commands.

I. INTRODUCTION

The rationing system is used to share the resources among the people. Science there is no control on the system the problem of corruption at ration shop is becoming one of the serious issue. The system we are introducing is completely automatic and it will be easy to send all the information of the activity occurring at the ration shop to the government. In our system we are replacing the ration card with the character reorganization of AADHAR card. The government should have control over the transition being done at ration shop, so we are connecting the system to the government through GSM module. The distribution of the commodities is also made automatic by using load cell. The person have to receive some ration at the shop will have to show his/her AADHAR card to the PC through web camera the image of the AADHAR card will be taken and using character extraction the unique identification number(UID) on Aadhar card is extracted. There will be a database in PC in which all the information related to every customer is saved e.g. customer's name, how much amount of good he should get etc.the extracted data will be matched with the stored data and with respect to that the material will be dispatch form tha machine. The material will be stored in the container placed over a load cell which will measure the quantity of material. Once the amount of quantity is exceeded more than it is decided the processor will stop the machine and exactly the proper amount of commodities will be dispatch from the shop for every person.

1.1 Existing System

In existing system all the work is done by human beings at the ration shop. There is no involvement of software in the existing system.

1.2 Proposed System

Our system is designed to reduce the corruption at the ration shop. The system mainly consists of hardware and software as well. The system is made completely automatic no human is involved in the system also the status of the activities being done at the ration shop is informed to the government with the help of GSM modem. Thus this system will surely improve the distribution process and will make fair to every person.

II. HARDWARE REQUIREMENTS

Our system comprises of following components:

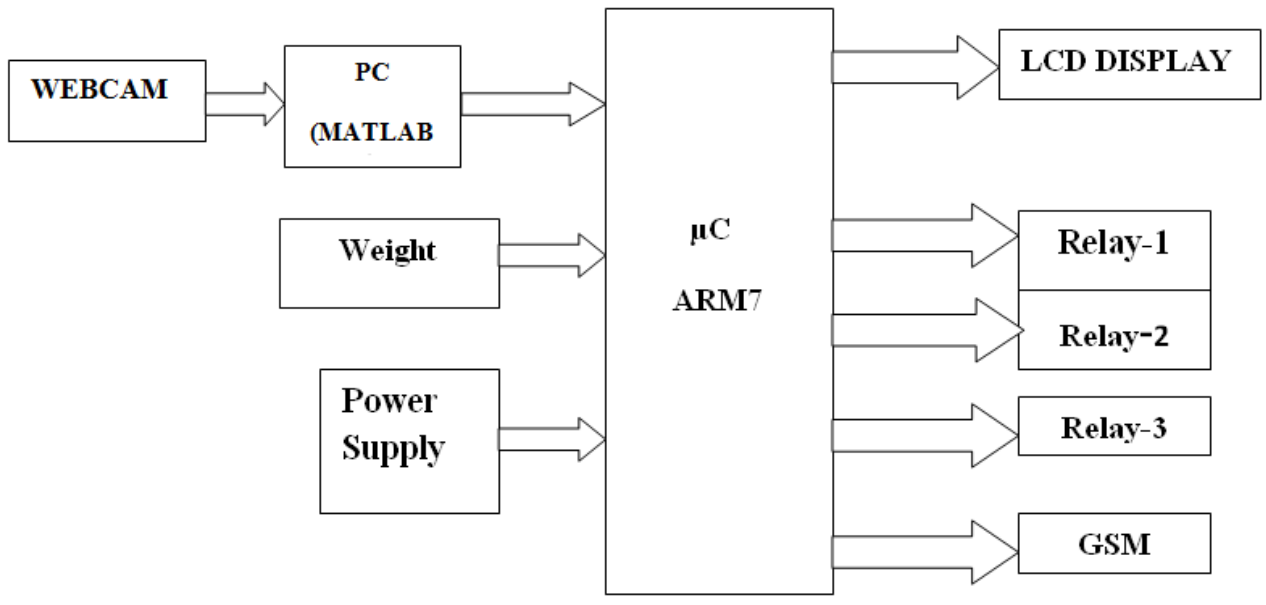
1. ARM7
2. Load cell CZL601
3. GSM module
4. LCD
5. Webcam INTEXIT305WC
6. IR LED

III. SOFTWARE REQUIREMENTS

Our system require following software:

1. Eclips
2. Proteus
3. Matlab

IV. BLOCK DIAGRAM



4.1 Block Diagram Explanation

4.1.1 ARM 7

This generation introduced the Thumb 16-bit instruction set providing improved code density compared to previous designs. The most widely used ARM7 designs implement the ARMv4T architecture, but some implement ARMv3 or ARMv5TEJ. All these designs use a Von Neumann architecture, thus the few versions comprising a cache do not separate data and instruction caches.

Some ARM7 cores are obsolete. One historically significant model, the ARM7DI is notable for having introduced JTAGbased on-chip debugging; the preceding ARM6 cores did not support it. The "D" represented a JTAG TAP for debugging; the "I" denoted an ICEBreaker debug module supporting hardware breakpoints and watchpoints, and letting the system be stalled for debugging. Subsequent cores included and enhanced this support.

It is a versatile processor designed for mobile devices and other low power electronics. This processor architecture is capable of up to 130 MIPS on a typical 0.13 µm process. The ARM7TDMI processor core implements ARM architecture v4T. The processor supports both 32-bit and 16-bit instructions via the ARM and Thumb instruction sets.

The ARM7TDMI (ARM7+16 bit Thumb+j tag Debug+fast Multiplier+enhanced ICE) processor is a 32-bit RISC CPU designed by ARM, and licensed for manufacture by an array of semiconductor companies. In 2009 it remains one of the most widely used ARM cores, and is found in numerous deeply embedded system designs. The ARM7TDMI-S variant is the synthesizable core.

Data EEPROM memory. It also has facility like self-reprogrammable under software control, power-on Reset (POR), Power-up Timer (PWRT) ,oscillator Start-up Timer (OST) ,watchdog Timer (WDT) with its own On-Chip RC Oscillator for reliable operation, programmable code protection, power saving SLEEP mode selectable oscillator options.

4.1.2 Liquid Crystal Display

LCD is used in a project to visualize the output of the application. We have used 16x2 lcd which indicates 16 columns and 2 rows. So, we can write 16 characters in each line. So, total 32 characters we can display on 16x2 lcd. LCD can also used in a project to check the output of different modules interfaced with the microcontroller. Thus lcd plays a vital role in a project to see the output and to debug the system module wise in case of system failure in order to rectify the problem.

4.1.3 Camera

The Rs232 standard is used to interface the computer with the microcontroller. The computer is connected by the web camera for recognition. The MATLAB software window is used.

4.1.4 PC

We already know about the facility of the mobile, so after receiving data from the webcam we can copy or use the same data in our PC. The PC and RF receiver can be interfaced with the help of the data cable DKU-50.We are using the MATLAB software in our PC for the user interface with the system. With the help of this MATLAB software any user can easily make the use of the system. This MATLAB software provides the notice typing and editing facility. Also we can copy the same content as received through mobile in the editing window

and call it as a notice. Hence the PC/MATLAB software provides the typing, editing and formatting options to the user.

4.1.5 RS 232

RS 232 is a serial communication cable used in the system. Here, the RS 232 provides the serial communication between the microcontroller and the outside world such as display, PC or Mobile etc. So it is a media used to communicate between microcontroller and the PC.

In our project the RS232 serves the function to transfer the edited notice (or data) from PC (MATLAB software) to the microcontroller, for the further operation of the system.

4.1.6 Load Cell

A load cell is a transducer that is used to create an electrical signal whose magnitude is directly proportional to the force being measured. The various types of load cells include hydraulic load cells, pneumatic load cells and strain gauge load cells.

4.1.7 RELAY

It is on/off switch which uses 12V supply. It is use to make the switch on or off. Here we use 12v single change over relay. A relay is an electrically operated switch. A simple electromagnetic relay consists of a coil of wire wrapped around a soft iron core, an iron yoke which provides a low reluctance path for magnetic flux, a movable iron armature, and one or more sets of contacts. The armature is hinged to the yoke and mechanically linked to one or more sets of moving contacts. It is held in place by a spring so that when the relay is de-energized there is an air gap in the magnetic circuit. In this condition, one of the two sets of contacts in the relay pictured is closed, and the other set is open. Other relays may have more or fewer sets of contacts depending on their function. When an electric current is passed through the coil it generates a magnetic field that activates the armature, and the consequent movement of the movable contact either makes or breaks a connection with a fixed contact. If the set of contacts was closed when the relay was de-energized, then the movement opens the contacts and breaks the connection, and vice versa if the contacts were open. When the current to the coil is switched off, the armature is returned by a force, approximately half as strong as the magnetic force, to its relaxed position. Usually this force is provided by a spring, but gravity is also used commonly in industrial motor starters.

When the coil is energized with direct current, a diode is often placed across the coil to dissipate the energy from the collapsing magnetic field at deactivation, which would otherwise generate a voltage spike dangerous to semiconductor circuit components. Some automotive relays include a diode inside the relay case.

4.1.8 IR Obstacle Sensor

Here we are connecting an IR based obstacle sensor. The 50 ohm resister is used for current limiting. The current through the LED is 5v / 50 ohm = 100 m amp, which is high for an LED. But to increase the range of the obstacle sensor we are using a lower range resistor (50 ohm).

On the receiver side we have connected the IR receiver in reverse bias. So as soon as the light falls in the IR receiver, the anode voltage increases and when the anode voltage is more than the cathode voltage then the LED is in forward bias mode and start conducting.

V. CONCLUSION

The proposed system is aimed towards the corruption free ration system. Our system helps to inform government about the activities happening at the ration shop. It also for the direct communication between the customer and the government. Hence, our system is sure to create a corruption free, legal and a fair rationing system which leads to the customer's satisfaction.

VI. ACKNOWLEDGMENT

We would like to express our sincere gratitude towards Prof. B. R. Thawali for guiding us throughout this paper research and providing us useful information needed for us to make this paper possible.

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