DESIGN AND CONSTRUCTION OF A COIN-BASED AUTOMATIC WATER TANK VENDING MACHINE

ABSTRACT

Automated coin-based water dispensing system is massively used nowadays and these machines are used to the mankind by different coins. The machine is powered with a microcontroller and sensors. The water dispensing system is built based on smart sensors which send signal to the microcontroller. The system has a coin detector that is used to sense a particular coin and send information to the microcontroller to perform its function. This type technology is also used for cool drinks, cofee milk maker, ice cream etc.

Keywords—Water dispensing system,Microcontroller, smart sensors and coin detector.

PROBLEM STATEMENT

In the suburb of Kentikrono in Kumasi, there is a shortage of water for a whole street on which people live. Only few houses have portable water available and the person in charge of selling water to people in the surrounding is not always around which brings about a long queue in the morning and in the evening due to a high demand of potable water for house chores in daily basis. Moreover, the availability of water in that area depends on the seller which affects drastically the population in terms of sanitation, growth and production.

In this regard, an automated water tank vending machine is proposed to allow instant access to potable water to solve the escalating shortage of selling water in the surrounding.

PROJECT DELIVERABLES

The inputs and outputs of the proposed system is listed below

Inputs

- Coin sensor CH926
- Infrared sensor FC-51
- Float switch
- Relay
- 12v battery
- Solenoid valve
- DC Submersible pump
- GSM sim 800L
- Arduino Uno

Ouputs

- **Liquid crystal display**

CONCLUSION

The outcome of this project is a fully automated water tank vending machine which monitors the level of water in the tank, refills and altert the owner about the level of water in the tank. Besides, the system accepts the right coin and it dispenses drinkable water based on the amount of coin slotted in. Finaly, this system is recycable, safe and environmental friendly.