Digital Water System

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Abstract: *A Vending machine is used to gives a product to user once a certain amount of money is deposited into it. Basically vending machines used to sell food, cold-drinks and other small items, but nowadays they also sell product like cameras, mobile etc. Vending machines are easily found in tourist spot, airport railway station etc and vending machines very popular in developed countries like Japan, US, UK. Convetionally people used cash as standard payment mode for vending machine. But now a day's people prefer for modern payment models, implement a payment system that accepts digital payment via UPI, online wallets etc. Here we are solving common issue faced by customers that sometime don't have the proper change a signal reception.*

**Keywords:** Vending Machine, Raspberry Pi 3 B+, Digital Payment

I. INTRODUCTION

The primary very first coin-operated vending machines were introduces in London, England. Invented in 1883 by Percival Everitt, the machines were found at railway stations and post offices, as they were a convenient thanks to purchase envelopes, postcards, and notepaper means automatic vending machines is not only for our country. The advantages of the machine is not require human supervision means its useful to reduce man power, it is highly efficient machine, more compactable, easy to maintain and use, also portable. Most of the vending machines available on coin but coin based vending machines have some drawback like money fraud, damage of sensor. So there should be system for vending machines to accepts digital payment facilities like UPI and other digital wallets like Paytm, PayPal, PhonePe, MobiKwik etc. This is allow to people to pay for things without having actually carry cash and go cashless.

II. MOTIVATION

One of the best advantages of digital payment is the reliable experience they provide to end users. Reduce dependency on cash, fast transfer speed, and the ease of transacting make online payments a preffered option, Traditional payment methods like cash and cheques add to factors like risk, steps and physical presence, With digital payment, you can send and receive fast from anywhere in the world at the click of button.

III. BLOCK DIAGRAM
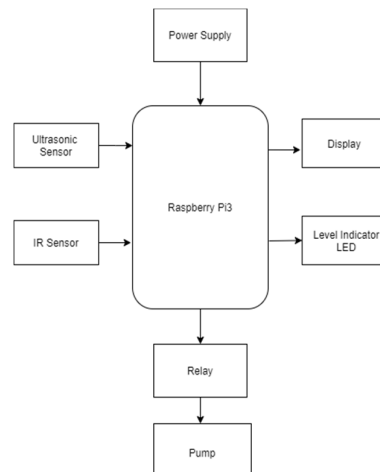
IV. BLOCK DIAGRAM DESCRIPTION

4.1 Raspberry Pi 3B+

Raspberry Pi 3B + is SoC device. It has BCM2837 ARM cortex processor from ARM v8 family. Raspberry Pi has its own operating system which is namedas raspbein jessie. Raspberry Pi has 40 GPIO pins. These pins makes Raspberry Pi family makes very special system on chip device, to control peripheral.

4.2 IR Sensor

IR Sensor stands for Infrared Radiation. It is an electronic device, that emits the light in order to sense some object of the surrounding. In digital water system the IR sensor is used to detect water bottle with limited distance.

4.3 Ultrasonic Sensor

An Ultrasonic sensor emits sound wave towards an object and determine its distance by detecting reflected wave. In this project we are using ultrasonic sensor to detect level of water in water tank.

4.4 Relay

A relay is an electrically operated switch. They commonly use an electromagnetic coil to operate their internal mechanical switching mechanism. When a relay is Normally open this will switch ON for a circuit when the coil is activated.

4.5 LCD Display

LCD stands for liquid crystal display. It is kind of electronic display module used in Digital Water System. This display are mainly preferred for multi-segment light emitting diodes and seven segment. Main benefit of this display is its inexpensive and it has no limitation for displaying character.

4.6 Power Supply

In Digital Water system we use SMPS (Switch Mode Power Supply) as Power supply it is a type of power supply. We use this power supply because its having some advantages its having higher efficiency compare to other linear regulator.
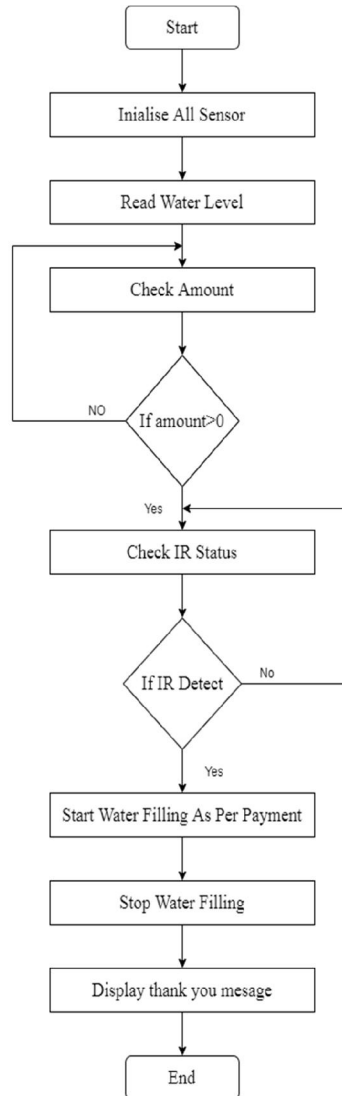
4.7 Water Pump

Water pump mainly used for push the water its depend upon displacement and kinetic energy. These pumps use AC power also DC power for giving energy to the motor. water pump energized by using other kinds of things like gasoline engines otherwise diesel.

V. OUTPUT

VI. FLOWCHART

VII. USED SOFTWARE/PROGRAMMING LANGUAGE

7.1 Python Programming Language

Python is an interpreted high level general purpose programing language. python's design philosophy emphasizes code reliability with its notable use of significant whitespace .Its language constructs and object oriented approach aim to help programmers write clear logical code for small and large scale projects. Python is dynamically typed and supports multiple programming paradigms including procedural object oriented and functional programming.

VIII. CONCLUSION

Implimentation of digital water system is the step toward future technology and it is step to enter in eco-friendly world. This digital water vending machine is easy to use and it can easily accessed by any person. This system can be implemented anywhere in the world.

REFERENCES

[1]. Literature Survey on NFC and coin based stationery vending machine by R.Kishore[1], Dilip Kumar C N[2], Devaraj.M[3], Mrs. Sangeetha V[4]vol, 9, issue 4, April 2022.