Smart Dustbin With IOT Notifications

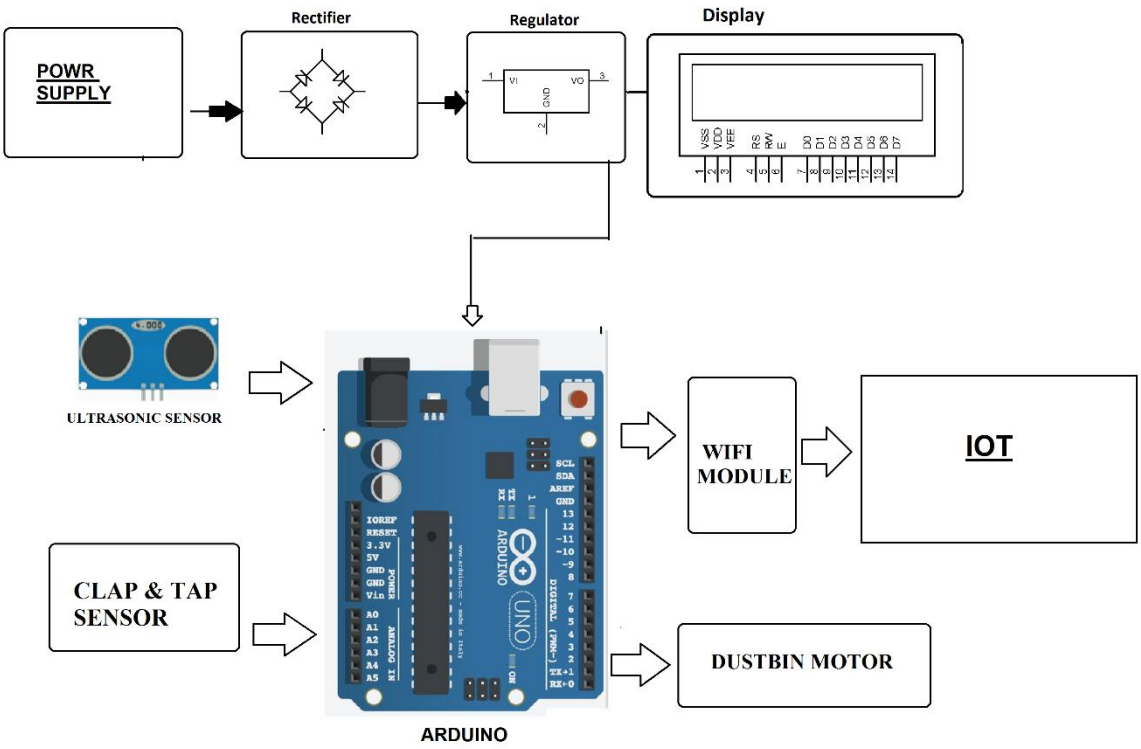
Abstract:-

With increase in population we have an increase in the garbage around urban areas. Here we propose a smart dustbin that operates automatically to help solve this issue using IOT and sensor based circuitry. Usual dustbins require to be opened by pressing foot against its lever and then throwing garbage. Also a person needs to keep track when it is full so that it can be emptied and does not overflow. Here we propose a smart dustbin that does all this by itself. Our system consists of a sensor in order to detect human clap signal and on a clap of foot tap it opens automatically without anyone needing to press its lever.

The dustbin opens automatically when it receives the signal and closes its hatch. Also the dustbin consists of a level sensing ultrasonic sensor that constantly measures the level of garbage in the bin and automatically detects if it is about to fill up. The dustbin now consists of a smart circuitry that transmits this information over the web to signal the main garbage collector of the facility to empty the particular garbage bin. We use IOTgecko to develop the online web part for the iot system.

This bin is of a vast usage in offices, homes and even in public places for garbage management. Thus we get a fully automated smart dustbin that allows for automated garbage cleaning.

Block Diagram:



Hardware Specifications

1. Arduino Uno R3 – Buy Arduino Uno R3 Online
2. HC-SR04 Ultrasonic – Buy Ultrasonic Sensor Online
3. Mic Sensor -Buy Sound Sensor Online
4. ESP8266 Wifi Module – Buy Wifi Module Online
5. Resistors – Buy Resistors Online
6. Capacitors – Buy Capacitors Online
7. Transistors – Buy Transistors Online
8. Cables & Connectors – Buy Cables & Connectors Online
9. Diodes – Buy Diodes Online
10. PCB – Buy PCB & Breadboards Online
11. LED's – Buy LED Online
12. Push Button – Buy Buttons & Switches Online
13. Bin Frame
14. Mounts & Joints
15. Supporting Frame

Software Specifications

- Arduino Compiler
- Programming Language: C
- IOTGecko