IoT Based Intelligent Dustbin Monitoring System

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Introduction

- Implementing smart solutions for garbage management
- In effective ways to maintaining our environment clean and hygienic.
- Preventing garbage bins being overfull.

Motivation

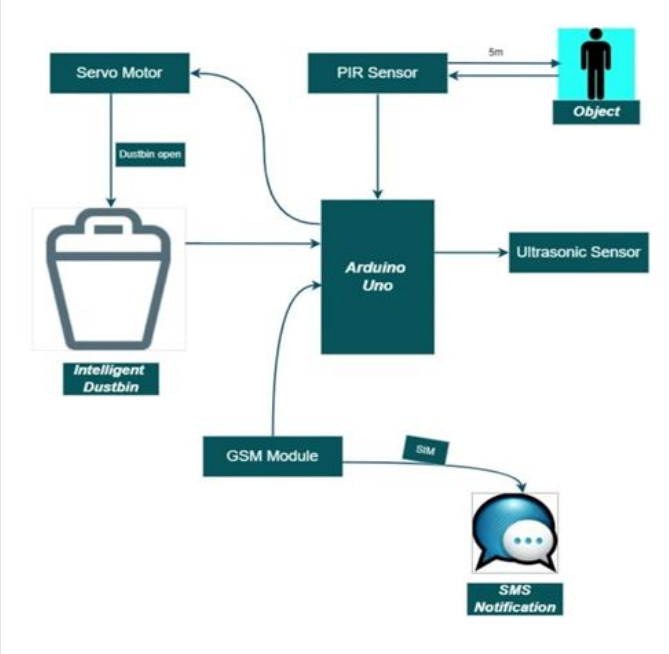
In cities avoid unhygienic & ugliness condition we come up a project called Intelligent Dustbin. Which is a GSM based waste and garbage collection bins overflow indicator systems for smart cities.

Problem Statement

- Lack of proper systems for disposal and collections
- Most of the dustbin is not a user-friendly
- The cleaner does not accept the information about the overflowing garbage inside the dustbin.

Proposed System

- The proposed system will help to avoid the overflow of dustbin.
- We will able to know the real-time information about the level of the dustbin.
- When the dustbin becomes full it will send the message to the Garbage collector immediately.



Components

- Arduino Uno Board
- Ultrasonic Sensor
- GSM Module
- Servo Motor
- PIR Sensor

Components(Cont.)

- Garbage Container
- Jumper Wires
- LED
- Breadboard

Software:

- Arduino IDE

Working Procedure

- Ultrasonic Sensor and Servo Motor are connected to the respective pins of Arduino.
- PIR sensor detects an object like the hand.
- If object is less than a predefined value, the servo motor gets turned on first.
- The lid will open for a given time then it will automatically close.

Comparison with others system

- Organized and user friendly.
- Has social impact also can catch user attraction.
- Automatically open and close of the lid of Intelligent dustbin.

Experimental Results

Initially the dustbin lid is closed

Dustbin lid is open & green led on

Lower half of dustbin is full & yellow led on

Dustbin is full & red led on

Dustbin is full & message has received

Conclusion

Garbage is generating at a higher pace but the garbage management system has not improved so here Intelligent dustbins are a better solution. IoT Based Intelligent Dustbin monitoring system can be very effective this model will digitalize and modernize the cities by applying the IoT-based Intelligent Dustbin monitoring system of Bangladesh.

Future work

So in the future, We can develop it better by adding more sensors that will help us to make this Intelligent dustbin auto moveable

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Thank
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