

### SMART DUSTBIN USING GSM MODULE

#### ABSTRACT:

A smart dustbin, also known as an intelligent or automated trash can, is a modernized and efficient solution to manage waste disposal. It is equipped with sensors and other advanced technologies that allow it to perform various tasks automatically, such as opening the lid when it detects the presence of an object within a certain distance, indicating the level of the bin's capacity and sending notifications to users when the bin is full and needs to be emptied.

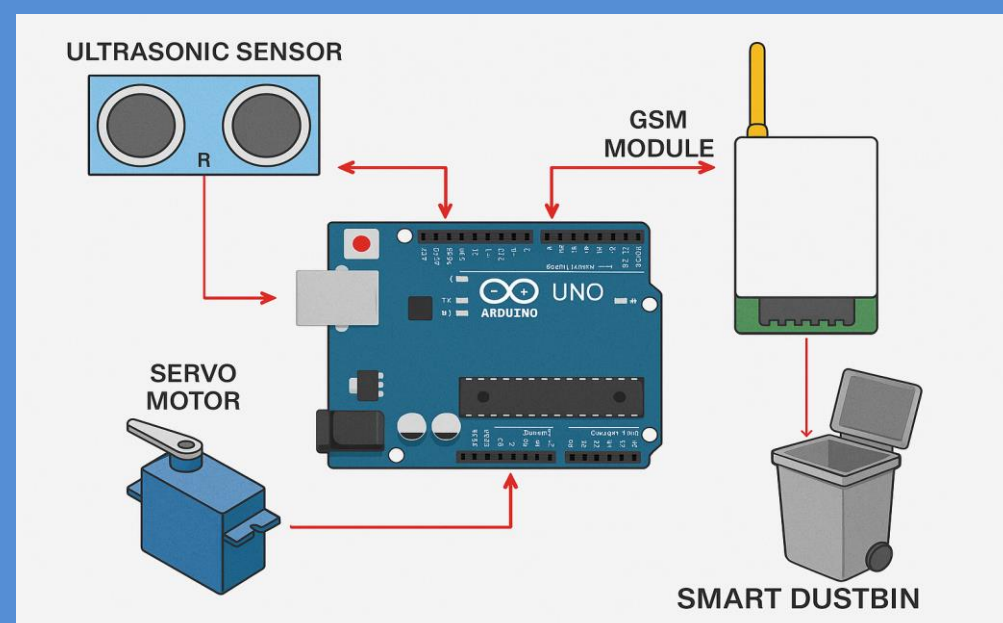
**INTRODUCTION** :A smart dustbin is an innovative and eco-friendly solution that helps in waste management by monitoring the level of waste in a dustbin and alerting the appropriate authorities when it needs to be emptied. The system is equipped with a GSM module that sends notifications to the concerned authority or waste management team through a text message , offices, and homes because they not only simplify waste management but also help in keeping the environment clean and hygienic. They also have the potential to reduce the workload of waste management workers and promote efficient waste disposal practices.

Overall, a smart dustbin using a GSM module is an effective and efficient solution for waste management. It helps in reducing the workload of waste management teams and ensures that the waste is disposed of properly and in a timely manner.

#### METHODOLOGY / DESCRIPTION:

- ❖ It consists of two ultrasonic sensors that detect the presence of an object within a 5-meter range.
- ❖ One of the sensors is used to open the dustbin lid when an object is detected within the 5-meter range, using a servo motor, and the other sensor is used to send an SMS alert to the user when the dustbin is full.
- ❖ After a specified delay time, the servo motor automatically closes the lid, ensuring that the dustbin is not left open for too long.
- ❖ The second ultrasonic sensor detects the fill level of the dustbin, and when it reaches a specified threshold level, it sends an SMS alert to the user's mobile phone, indicating that the dustbin is full and needs to be emptied.
- ❖ The system is controlled using an Arduino board, and the GSM module is used to send SMS alerts to the user's mobile phone.

#### BLOCK DIAGRAM / CIRCUIT DIAGRAM:



#### CONCLUSION:

The system helps in efficient waste management by ensuring timely collection and disposal of waste. The smart dustbin system can help in reducing costs associated with waste collection and disposal, as it ensures that waste is collected only when necessary. The system helps in maintaining cleanliness and hygiene in the surroundings by ensuring that waste is not left uncollected for long periods. The GSM module in the system allows real-time monitoring of the dustbin's status, which helps in managing the waste more effectively. In conclusion, a smart dustbin using a GSM module is an innovative solution that can help in efficient waste management, reduce costs, and maintain cleanliness and hygiene in the surroundings.

#### SNAPSHOT:

