# SMART GARBAGE BIN MONITORING SYSTEM USING INTERNET OF THINGS (IOT)

**ABSTRACT**

The uncollected waste material when the wastebin is full is a common problem nowadays in smart cities. Thus, an efficientwaste management for the waste material is essential inensuring a clean and green surrounding environment. Thispaper presents smart waste collection monitoring and priority based alert system via IOT for smart cities to monitor the wastematerial at the selected site of garbage collection area. Our physical device uses an ultrasonic sensor to be aware of a dustbin’s current content level in the bin. If the level reaches or exceeds a threshold percentage of the total capacity of the dustbin, it informs our servers, via an online application programming interface (API) developed for this purpose. The API also stores related data – fill time, cleanup time and location. This dynamic dataset generated is analyzed by our algorithm, to determine the times of the day, when a regular cleanup should be performed, such that the dustbins are clean, for the maximum possible portion of the day. The algorithm also shows the locations, where another dustbin should be installed, for further optimization. In either case, a new dustbin installation is advised at such locations.

**BLOCK DIAGRAM**

**LCD**

**MICROCONTROLLER**

**WIFI**

**ULTRASONIC**

**POWER SUPPLY**

**ONLINE MONITORING:**

**WEB APPLICATION FOR SMART GARBAGE MONITORING SYSTEM**

**HARDWARE REQUIREMENTS:**

* NODE MCU / ARDUINO UNO
* SENSORS: ULTRASONIC SENSOR
* LCD
* POWER SUPPLY

**SOFTWARE REQUIREMENTS:**

* ARDUINO IDE
* PHP
* HTML
* MYSQL