**IoT based Smart Bin- A Swachh-Bharat Initiative**

**Aim:**

 The aim of this project is smart and automatic moving and waste disposed dustbin for older people, patients and industries.

**Abstract:**

Today main issue of pollution is Garbage Overflow. It creates unhygienic condition for the people and create a bad smell in surroundings leading to spread of some deadly diseases and human illness. To avoid all such situations we are going to implement a project called IoT Based waste management using smart dustbin for industries and older people. The implementation is done with the help of IoT concept. The Internet of Things (IoT) is a concept in which surrounding objects are connected through wired and wireless networks without user intervention. Objects communicate and exchange information. In this system, multiple dustbins are located throughout the city or the Campus, these dustbins are provided with a sensor which helps in tracking the level. When the level of the bin reaches the threshold limit, send to cloud. After that the dustbin will move for dispatch the excess waste to the particular navigated place. In order to avoid the decaying smell around the bin harmless chemical sprinkler is used which will sprinkle the chemical as soon as the smell sensors detect the decaying smell. Once the bins are full then the user will not be able to access the bins.

**Existing system:**

In this existing system is, IoT based Smart Bin by using an esp8266 module is developed here. When disposing of any waste it will automatically open the lid and also detect the thrash level and display the result on the monitor if it exceeds the set threshold. This project can keep our surroundings clean and green and also contribute in reducing the human labor.

**Proposed system:**

In this proposed system is used to collect waste from industries or older people, dispose automatically by using the Arduino UNO controller. The LFRS (line following robotic system) is used for transporting the waste. The ultrasonic sensor is used to check the waste level. ESP8266 is continuously monitoring the dustbin status.

**Block diagram:**

Arduino uno

Power supply

Ultrasonic sensor 1

Ultrasonic sensor 2

Motor driver

Dc motor

IR sensors

Disposing mechanism

ESP8266

Cloud

**Block diagram description:**

Above the block diagram contain arduino uno, ESP8266, ultrasonic sensor, IR sensors, motor driver and dc motors. Aruino uno is the main controller of this project. Ultrasonic sensor one is used to detect the waste level in the dustbin. If the dustbin is filled, motor driver will operate by controller and automatically move to waste disposing place. The robot will follow the black line by using IR sensors. ESP8266 is used to send data from dustbins to the cloud.

**Requirements:**

**Hardware Requirements:**

* **Arduino uno**
* **ESP8266**
* **Motor driver-2**
* **DC motor -3**
* **Ultrasonic sensor -2**
* **IR sensor -2**

**Software Requirements:**

* **Language: c, c++**
* **Compiler: arduino IDE**