Problem:

The overflowing of the garbage bins is very common in India. Garbage bin at public places gets overflowed well in advance before the commencement of the next cleaning process. It in turn leads to various hazards such as bad odour & ugliness to that place which may be the root cause for spread of various diseases. To avoid all such hazardous scenario and maintain public cleanliness and health this work is mounted on a smart garbage system.

Solution:

* Our proposed project, an IOT based cost efficient garbage monitoring system which will monitor and alert when the garbage level crosses the threshold level of the garbage bin.
* This process will be carried out with the help of sensors, microcontroller and ESP8266. It will also provide the GPS link along with the alerting text message to find the shortest path of the mentioned bin ID. This will reduce the human efforts, also reduces the fuel consumption.
* Basically, the process starts from the garbage bin. **Ultrasonic Sensor** is used for detecting whether the trash can is filled with garbage or not. Here, Ultrasonic Sensor is installed at the top of Trash Can and will measure the distance of garbage from the top of Trash can and we can set a threshold value according to the size of trash can for alerting purpose.
* As soon as the garbage in the garbage bin crosses the threshold level, the alerting text message will get provided to the concerned person or in the municipality office. This message contains the garbage bin ID along with the GPS link. This GPS link will help to find the shortest path of that garbage bin. This is helpful especially for new drivers of that municipality vehicle.
* Basically, there are five main parts of the whole system. Power supply part, Sensing part, Processing part, Uploading to the server/cloud, and the alerting part. Ultrasonic sensor, senses the garbage level and accordingly sends the signals to the ATMEGA328 microcontroller. Also, the GPS co-ordinates of the garbage bin are provided to the microcontroller. ATMEGA328process the received signal and passed further to the ESP8266. ESP8266 is a Wi-Fi module which is also working as a transmitter in our system.