BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Synopsis for the Project Based Learning

GARBAGE MONITORING SYSTEM

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Abstract:

Nowadays certain actions are taken to improve the level of cleanliness in the country. People are getting more active in doing all the things possible to clean their surroundings. Various movements are also started by the government to increase cleanliness. We will try to build a system which will notify the corporations to empty the bin on time. In this system, we will put a sensor on top of the garbage bin which will detect the total level of garbage inside it according to the total size of the bin. When the garbage will reach the maximum level, a notification will be sent to the corporation's office, then the employees can take further actions to empty the bin. This system will help in cleaning the city in a better way. By using this system people do not have to check all the systems manually but they will get a notification when the bin will get filled.

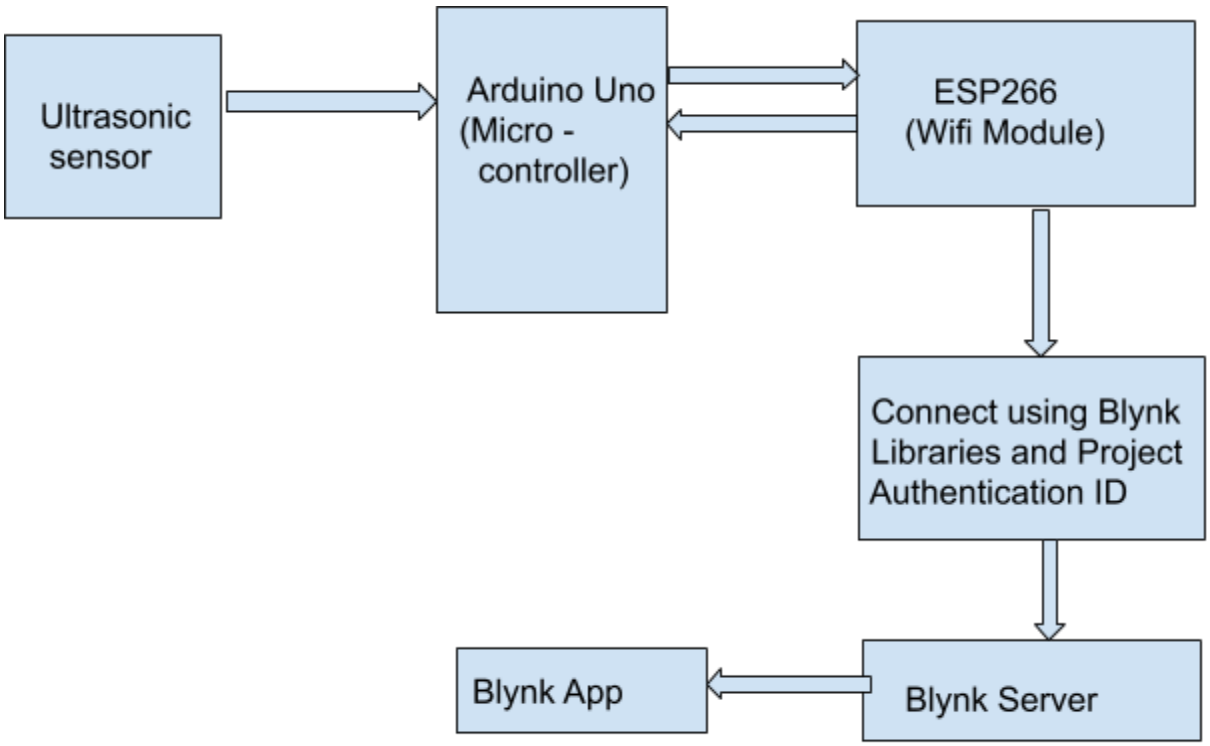
Introduction:

IoT or Internet Things refers to the network of connected physical objects that can communicate and exchange data among themselves without the desideratum of any human intervention. It has been formally defined as an "Infrastructure of Information Society". Thus, any object in the physical world which can be provided with an IP address to enable data transmission over a network can be made part of IoT system by embedding them with electronic hardware such as sensors, software and networking gear.In this project, we are going to propose a system for the immediate cleaning of the dustbins. As dustbin is considered as a basic need to maintain the level of cleanliness in the city, so it is very important to clean all the dustbins as soon as they get filled. We will use ultrasonic sensors for this system. After this the bin should be emptied as soon as possible. The concept of IoT when used in this field will result in a better environment for the people to live in. With the help of this system minimal number of smart bins can be used around the whole city and the city will still be much cleaner.The disadvantages of the existing system are that the employees have to go and check the bins daily whether they are filled or not, it results in high cost. If the bin doesn't get emptied on time then the environment becomes unhygienic and illness could be spread. The proposed system will help in removing all these disadvantages.

Motivation:

The main objective is to maintain the level of cleanliness in the city and form an environment which is better for living. The employees can check the status of these bins anytime on their mobile phones. This can prove to be a very useful system if used properly. Ultrasonic sensor is being used in this system to check the level of garbage in the dustbins but in future various other types of sensors can be used with the ultrasonic sensor to get more precise output and to take this system to another level. As this system also reduces manual work certain changes can be done in the system to take it to another level and make it more useful for the employees and people who are using it. In future, a team can be made which will be in charge for handling and maintaining this system and also to take care of its maintenance.

Block diagram of the System



System Requirement Specifications (Functional & Non-Functional):

1) Arduino Uno
2) ESP8266 (Wi-Fi Module)
3) Ultrasonic Sensor
4) Bread board
5) Jump wires

Applications:

It is applicable in places such as

1) Schools and Colleges
2) Public Places
3) Shopping Malls
4) Hospitals
5) Industries
6) Gardens
7) Railway Stations

Advantages:

By using this system we can constantly check the level of the garbage in the dustbins which are placed in various parts of the city. The system can be used as a benchmark by

the people who are willing to take one step further for increasing the cleanliness in their respected areas. The place can be maintained hygiene and can reduce the diseases. Manual checking of dustbins is not necessary. The garbage will be collected on time-to-time basis. There would not be any bad smell around the bin. Saving on fuel consumption, thus reducing the threats to the environment. It will also help in reducing the cost as the employees will have to go only at that time when the bin is full.

References:

Monika K A, Rao N, Prapulla S B and Shobha G 2016 "Smart Dustbin-An Efficient Garbage Monitoring System International Journal of Engineering Science and Computing ."