



Hygiene Monitoring System

D.Dharani¹, V.Lekhashree², K.Monisha³, C.Kamatchi⁴

B.Tech Student^{1,2,3}, Assistant Professor⁴

Department of IT

Prathyusha Engineering College, Thiruvallur, India

Abstract:

Human beings are very conscious on their health. The provision of hygienic washroom is globally recognized as a key intervention to promote the people live in a clean and hygienic environment. The aim of this project is to maintain a hygienic washroom in the hospital which can be implemented using the figaro sensor which will detect the smell level in the washrooms. ZigBee is used to transmit the information from sensors to receiver section, if the value exceeds the threshold value, it alerts the housekeeping management and housekeeping staff to identify washroom requires cleaning and maintenance with the help of alarm. RFID is used to monitor the working of housekeeping staff by updating the working time and date in the database. Feedback system is used to specify the problems through buttons such as leakage of water, insufficient tissue paper, insufficient of water etc. The feedback problems also update in the database and it can be viewed by housekeeping management.

Keywords: FIGARO SENSOR; RFID READER; ZIGBEE; ARDUINO UNO.

1. INTRODUCTION

The purpose of this paper is to provide clean and hygienic washroom. The provision of hygienic washroom may prevent from several diseases such as malaria, hepatitis, flu, cholera, typhoid etc. These projects based on IOT concepts using different sensors in order to maintain a clean and hygienic washroom. This paper can create awareness for maintaining a clean and hygienic washroom. Finally, this concept is the one of the stepping stone to the “clean and disease-free India”.

SENSORS

A. Figaro sensor

Figaro sensor is used to detect the smell in washrooms. The detected value exceeds the threshold value it will send the alert to the housekeeping staff and housekeeping management via Zigbee using AODV (Ad Hoc On-Demand Distance Vector) protocol. The figro sensor consists of two voltage input heater voltage and circuit voltage. The heater voltage is used to sense specific temperature. The circuit voltage is used to sense whether the temperature increase the specific temperature.



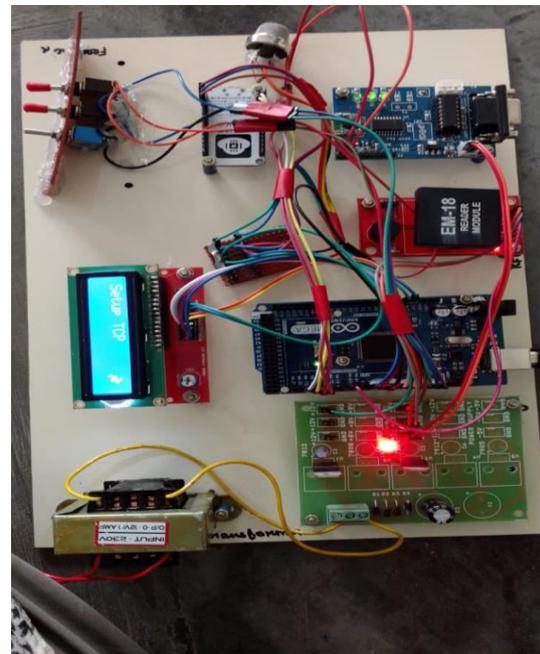
B. RFID Reader

RFID is used to scan the working staff ID to ensure that staff has cleaned the washroom and the data will be stored in database.



2. WORKING PRINCIPLE

Transmitter side

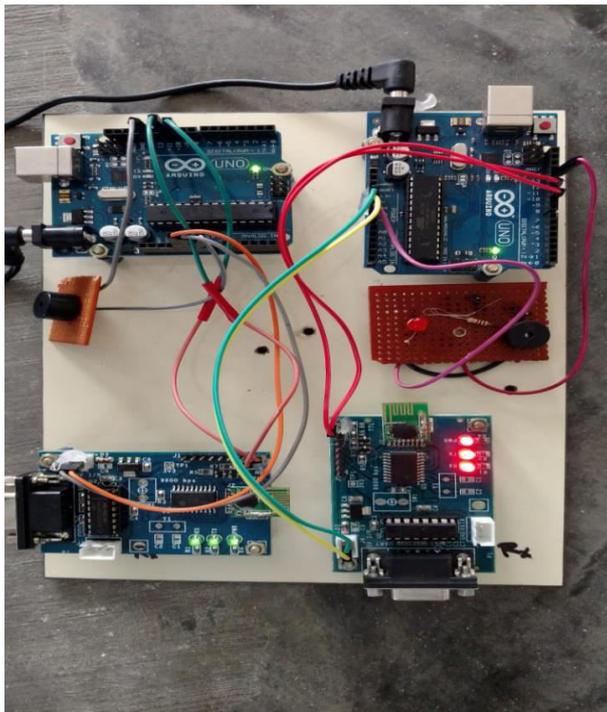


1. Transformer is used to transmit current to Power supply.
2. Power supply transmits the current to the Arduino mega in order to connect with RFID, Zigbee, Wi-Fi module, Figaro sensor.

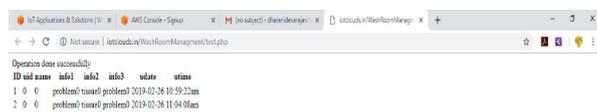
- Figaro sensor is used to detect the smell level in the washroom. If the smell level exceeds the threshold value then the alert will send to the housekeeping staff and housekeeping management.
- Feedback button is used to give complaints such as no tissue paper available; leakage of water, water unavailability etc. and it will be updated in the database.
- The RFID reader is used to read the tag of a housekeeping staff and the details of working will updated in database with time and date.
- ZigBee transmitter is used to transmit the alert message to the housekeeping staff and housekeeping management.

Receiver side

- ZigBee receiver is used to receive the alert message by using LED and alarm.
- Arduino Uno is used to embed the code in order to receive the alertness.

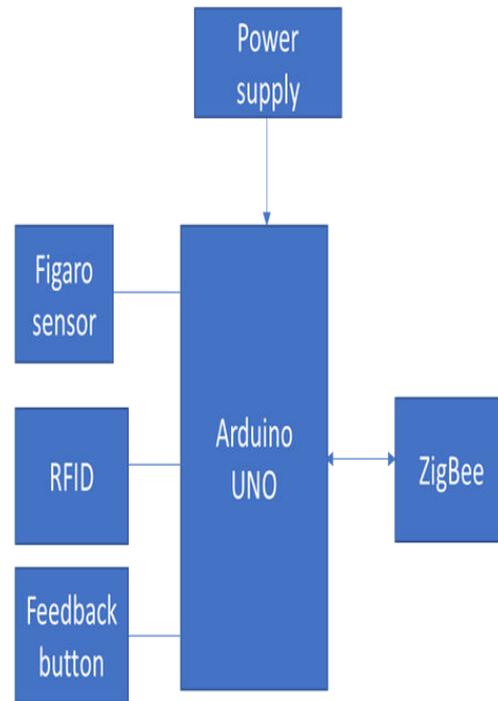


Database

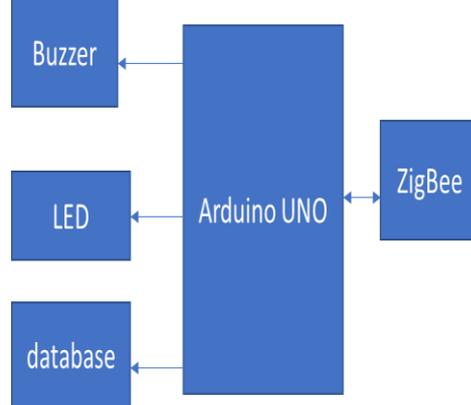


- The problems given through feedback button will be update in the database.
- The housekeeping working time and date also update in the database.

Block Diagram Transmitter side



Recover side



3. CONCLUSION

Hygiene is monitored in washroom by using these systems Thus, by using technologies in the smarter way, we can maintain the cleanliness which is next to the godliness.” Keep Clean, Be Safe”.

4. REFERENCES

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