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Automatic Toilet Cleaning System

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Abstract: ***The public toilets are very dirty in public places because the users don't flush water after using the toilet. In this project we are implementing the automatic toilet cleaning system, which clean the toilet with the help of some electronic devices and sensors. When the public toilets are dirty then the system clean the toilets automatically with the help of various sensors and arduino controller.***

Keywords: Embedded C, Arduino UNO.

I. INTRODUCTION

In India the local authorities and commercial peoples provide a public toilet facilities for general peoples. A public toilet is accessible to the general public. The public toilets are mainly available in public sectors like restaurants, school, bus stand, trains railway stations, etc. The people don't flush after using the toilets .The second reason behind that the regular cleaning is not done regularly. Due to this the toilet gets remain dirty.

Most toilets are not supplied with detergent and toilet cleaners and perfume and stuff. People in India don't think they will visit the same public toilet twice. So after doing their stuff, they leave without thinking of others. Toilet quality depends on who are using that. India also have different types of people. Decent man use it as well. But indecent people doesn't know how it will use as good manner. That is not their mistake.

II. PROPOSED SYSTEM

The public toilet cleaning system is automatically cleaning system in which various sensors and electronic devices are used to clean the toilets. There are basically three sensors are used like PIR Motion , potentiometer and electronic nose.

The PIRs motion sensor is a body sensor. It can detect levels of infrared radiation of body. Everything emits some low level radiation. It has 20 fit range of sensing body. After sensing the body it automatically ON the flush.

A potentiometer is changing the level of water with the help of float. Arduino board to achieve the level through relay effect. When the tank gets full then it automatically OFF the switch . If tank gets empty then it automatically ON the
Switch.

The electronic nose check there is smell in the washroom. If there is dirty smell and smell is detected then adjust fan is automatically "ON" with the help of arduino controller. With the help of the adjust fan the dirty smell go out from the washroom.

III. METHODOLOGY

A. Mechanism For The Water Level Checking

1) In our project, the float instrument is use for checking the level of the tank. Here, the float instruments shows by-default downward Direction towards the water that tells "The tank has empty" or "It has very low level".

2) After that, water passes the many level of the tank till the water has not got the last level, In this situation the float instrument used here, It has the particular range from 0 to 2.54 and less the 3.

3) When the water has passes the last level through the float instrument it gives the 1.99 value to OFF the motor that shows on the LCD Display.

Fig 3. Potentiometer

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B. Mechanism For The Smell Detecting

We have connected Electronic nose to microcontroller as an input and the Fan is connected to the microcontroller as an Output.The Electronic nose will sense the gas and gives signal to the controller as per the value set by coder.

Fig 2. Electronic Nose

C. Mechanism for the body Detecting

We have connected The PIR motion to the microcontroller as an input and The Flusher will used as an output for the same. The PIR motion is used for sensing body that will generate the value 0 or 1 and base onto that the output will get operated .

Fig 3. Potentiometer

IV. ADVANTAGES

A. Safety from disease.
B. Public toilet uses will increase .
C. Decrease the cleaner work burden.
D. Decrease the wasting of water.
E. It will improve women's safety and literacy.

V. FUTURE SCOPE

As our project based on the hardware parts the system totally works on the automatic. The future scope of our project is that to make the system Robotic rather than implementing the devices signally. And next one idea is that, taking the four flexible wires which is attach to the four walls (Each wall has one flexible wire) and rotate it on 360 degrees.This is the future scope to make the project more Effective.

VI. CONCLUSION

After studying the literature review we found some advantages and limitation of existing system. With the help of the PIR Motion,electronic nose, Potentiometer and Arduino controller we implement Automatic washroom cleaning system cleanliness of the washroom area and restrict the wasting of the water.By implementing some method and technique we are trying to develop the automatic system for cleaning the washroom.

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REFERENCES

[1] Chizuru Honda1, Md. Shoaib Bhuiyan2, Haruki Kawanaka1, Eiichi Watanabe3, and Koji Oguri . “Robust Estimation of Simulated Urinary Volume from Camera Images under Bathroom Illumination”.
[2] D. Taibi, V. Lenarduzzi. “On the Definition of Microservice Bad Smells” IEEE Software. Vol 35, Issue 3, May/June 2018.
[3] Teddy Mantoro1 , Wirawan Istiono. “ Saving Water with Water Level Detection in a Smart Home Bathtub Using Ultrasonic Sensor and Fuzzy Logic”.
[4] H. Lee, S. Jang, G. Shin, S. Hong, D. J. Lee, M. Chun, An Ultrasonic Multi-Beam Concentration Meter with a Neuro-Fuzzy Algorithm for Water Treatment Plants. Sensors vol. 15, Issue 10, pp. 26961-26977 (2015).

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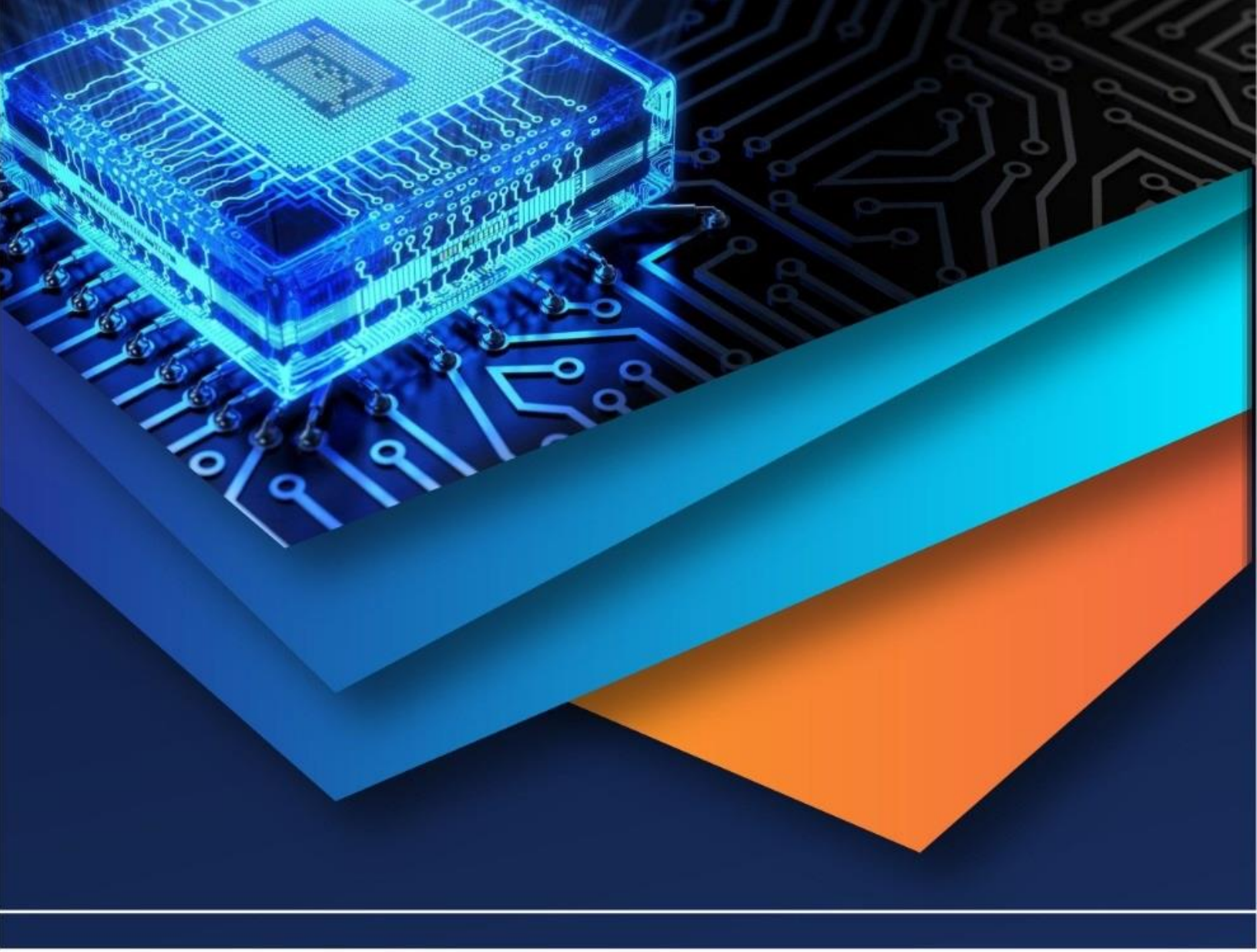

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