SMART PUBLIC RESTROOM

ProblemDefinition :

In the developing world, the natinos became modernig day by day definitely , yet at the same time the cleanliness in our nation is under risk. eople do not have enough knowledge of using toilets. This leads to several diseases, such as Malaria, Hepatitis, Flu, Cholera, Streptococcus, Typhoid, etc. The abstract of this paper is to deliver clean and hygiene toilets . All the public toilets should be clean and hygiene. In our country, our government has introduced the scheme called "Swachh Bharat"(Clean india) by our Prime Minister Shri.NarendraModi . Keeping the toilets uncontaminated is the one of the objective of Clean India scheme. This paper can be helpful to encourage the clean India project.

Project Definition:

The Project aims to enhance the public restroom management by installing IoT sensors to monitor occupancy and maintenance needs. The goal is to provide a real time data on restroom availability and cleanliness to the public through a platform or mobile app. This project includes defining objectives, designing the restroom information platform, and integrating them using IoT technology and python.

Design Thinking :

The system is controlled and monitored by using programmable logic controller PLC Step 7-200 from Siemens and Supervisory Control and Data Acquisition SCADA systems respectively. Most systems available today depend on a high degree of interaction between the user and the device. Especially for people relying on advanced levels of care, this scheme is impracticable. In this paper we are presenting an "intelligent toilet" performing an extensive health check while being as simple to use as a conventional toilet. Main focus of the system is to support the treatment of diabetes and chronic heart failure, but additional applications are possible. Here the sensors like PT1000 sensor, Pressure sensor, and RFID reader are used here. PT1000 sensor used to measure the thigh temperature. Pressure sensor is used measure the pressure of the base portion. of the toilet. Using RFID reader is used to sense the particular person result. It needs designing of the base portion of the toilet. It can sense all test results of patients through the toilet usage.

Objeectives :

In this paper we are going to provide the clean toilet. This paper can create the awareness among the people about the clean and hygienic toilets. This paper can

ensure the responsibilities of the sweeper. Finally, this concept is the one of the stepping stone to the “Clean and disease free India”.

Working Prinnciple :

• In the first phase, IR sensor is used to discover the dirt present in the toilet. • Here the set of sample images are given as input

• After using the toilet, the sensor senses the basin of the toilet

• Then it relates the sensed image with the input image.

• If the dirt present, it increases the alarm.

• Then the user wants to be clean the waste. Through this activity, people can get the awareness about the toilet management.

• In the second phase, Figaro sensor is used to perceive the unwanted gases present in the toilet.

• In the Figaro sensor, a particular range is to be stableearlier manner. If the range gets extended, it can send the alert message to the sweeper. Then they cleaned it by using proper fragrant.

• In the third phase, RFID reader (Radio Frequency Identification) is used to observe the sweeper’s activities (absence and presence in the toilet cleaning).

• Initially, the sweeper wants to show his/her individuality tag in front of RFID reader. It can be shown before and after cleaning the toilet.

• Then the first phase gets initiated and senses for the dirt presence in the toilet. • If the dirt gets noticed, it raises the alarm.

• Through this monitoring activity, the sweeper can realize their roles and responsibilities. Then they protect the people by disposing all the unwanted materials (dirt, unwanted gases) present in the toilet.

• In the final phase, the sonic sensor is used to detect the depth of the septic tank.

• Here, the range of septic tank is fixed prior manner.

• If the sewage reached with the range, then it directs message to an organization. • All the message transfer can be done by the GSM (Global System for Communication).

Innovations :

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SMELL SENSOR :

The Smell Sensor is used to detect the unwanted smell and gases in the toilet. For this purpose, we are going to use the sensor called Figaro sensor cansintellect the dry gases present in the toilets such as NH3, CO2, CH4, H2S, etc. By taking those gases leads to Nausea, Drowsiness, instant loss of awareness, etc. After sensing the unwanted gases, it can blink the red light. Then the sweeper can clean it by using particular Cleaning Agents.

Buzzer :

Buzzer is also called as Beeper. It is a sound signalling mechanical device.

GSM

GSM stands for Global System for Mobile communication. It establishes the mobile communication from one place to another place.

Here we are using GSM LT-2 communication module makes it possible to use GSM paths to provide monitoring and messaging functions in alarm systems.

ADVANTAGES

- It can creates an awareness among the people about the proper toilet management
- It can prevents the many contagious diseases like malaria, typhoid, cholera, streptococcus, asthma, etc..

THANK YOU