**SMART PUBLIC RESTROOM**

**IoT – PHASE – 2**

**PROBLEM DEFINITION AND DESIGN THINKING**

* **Problem Definition:**

-->Unavailability of rooms in the restroom.

-->Water scarcity or poor water quality.

-->Unhygienic restrooms.

* **Project (Potential solution):**

-->The project focuses on embarking an efficient public restroom facility and practical implementation for the same.

-->This can be done by installing IoT sensors such as for restroom occupancy using motion sensors and magnetic sensors and sensors for detecting cleanliness of the restroom and water availability and quality.

-->The sensors help in alarming the public for the availability in real-time and the maintenance team on the cleanliness of the restroom through the webpage or an application.

* **Design thinking:**

Objectives:

--> Restroom availability.

--> Cleanliness.

--> Water availability and quality.

IoT sensor design:

Deployment includes -

-->Motion sensors at the entrance of the restrooms for the count of people.

-->Magnetic sensors for taken rooms at the restroom.

-->Air monitoring sensor for the hygiene check of the restrooms.

-->Water sensor for water quality and availability.

-->Ultrasonic sensor for transmitting information wide range for the public display.

-->A database for complete log of the restroom maintenance since the installment.

* **Real-Time Transit Information Platform:**

Web or Application design:

-->A navigation bar for each attributes of the design

Attributes include:

--> Cleanliness rating.

--> Water availability.

--> Room availability.

--> Help section.

-->Each toggles to individual section where the user gets a detailed information on the particular attribute.

-->An attractive and easy to access web design for smooth surfing.

-->A feedback section for further development of the service.

* **Integration Approach:**

-->Installation of Gateways - for long-range communication.

-->Cloud Applications - converts raw data into useful information.

-->User interface - to connect Applications or webpages with the IoT devices.

-->A typical wireless communication includes:

-->Coordinator.

-->Router.

-->End-point.