VELAMMAL
INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Project name : Smart India Restroom
Team name : Proj_224780_Team_3
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Project Definition:

The "Smart India Restroom using IoT" project aims to transform traditional public restrooms into technologically advanced and efficient facilities by leveraging Internet of Things (IoT) technology. This project is designed to improve sanitation, user experience, and resource management in public restrooms across India.

Objectives:

1. Improved Hygiene and Sanitation.
2. Resource Management
3. Accessibility and Inclusivity
4. User Convenience and Experience
5. Maintenance and Remote Monitoring
6. Data Analytics and Reporting
7. Environmental Sustainability
8. Public Awareness and Engagement
9. Water and Energy Efficinecy
10. Cost Efficiency

IoT Sensor Design:

There are several IoT sensors and components that are used in the smart public restroom system using IoT. Some of them are as follows.

1. Occupancy Sensor
2. Water Flow Sensor
3. Water Quality Sensor
4. Soap and Sanitizer Dispensor Sensor
5. Smart Hand Dryers
6. Toilet Flush Sensor
7. Waste Bin Fill Level Sensors
8. Waste Compactor Sensor
9. Emergency Call Buttons
10. Temperature and Humidity Sensor

Real-Time Transit Information Platform:

Creating a real-time transit information platform for smart restrooms using IoT involves developing a system that offers timely and relevant information to restroom users. Here are the key components and features of such a platform:

1.Occupancy Sensors
2.Queue Management
3.Cleanliness and Maintenance Status
4.Hygiene Monitoring
5.Wait Time Prediction

Integration Approach:

Integrating IoT technologies into a smart restroom involves connecting various sensors and devices to create an interconnected and efficient ecosystem. Here's an integration approach for a smart restroom using IoT:

1.Define Objectives and Requirements
2.Sensor Selection and Placement
3.IoT Communication Protocol
4.Central Control System
5.Data Aggregation and Processing
6.User Interface Development
7.Restroom Access Control
8.Resource Management Systems
9.Environmental Control Integration
10.Cleaning and Maintenance Alerts