**Definition**

The smart public restroom Is created by installing IOT sensor to monitor occupancy. The main goal Is to provide the real time data on restroom availablity and cleanliness to the public through platform or mobile app.This project including defining objectives, designing the IOT sensor system, developing the restroom information platform, and integrating them using IOT technology and python.

**DESIGNING**

The main objective is to create a smart public restroom with IOT sensors,python&real time data for cleanliness reporting to a mobile app.

Here's a following steps involved:

1.the iot sensor is installed with in the restroom such as occupancy sensor for counting users, environmental sensor for monitoring temperature and humidity& proximity sensor for touchless operation

2.connect these sensor to a micro controller or IOT development board of raspberry pi or Arduino, equipped with Wi-Fi or other connectivity options.

3.python script is used in the sensor,Adafruit circuit python for sensor integration

4.The collected data is processed to extract relevant information such as restroom occupancy,temparature and cleanliness matrics.Python libraries like pandas for data Manipulation.

5.Imolement a mechanism to stream the processed data in real time to a cloud server or database.

6.frame work like react native or flutter. Integrate with cloud database to fetch real-time restroom data.

7.algorithm or models are used to assess cleanliness based on sensor data. To analysis restroom condition. The Opencv and tensor flow is used.

8.push notification within the mobile app to notify users of restroom availability cleanliness rating and alerts when maintenance is required.

9.users provide feedback on restroom cleanliness through the ap, which can be used to further improve the system.