IOT BASED PROJECTS

Project 1

Project Name: Smart Parking

Project Description: Implement IoT sensors in public parking spaces to monitor availability in real-time. This data can be made accessible through a public platform or mobile app, helping drivers find available parking spaces efficiently.

Use appropriate sensors to detect the presence/absence of a car in the parking space. Feed this information to an Arduino board connected with an ESP8266 module that sends this information to an online database platform(firebase) which is accessed by an mobile/web application to display empty parking slots.

Project 2

Project Name: Air Quality Monitoring

Project Description: Set up IoT devices to measure air quality parameters like pollution levels and particulate matter. This data can be made publicly available to raise awareness about air quality and its impact on public health.

Use any air quality sensor (eg: VOC sensor) to monitor air pollution levels, particulate matters and various other parameters that define air quality. Connect these sensors to a processor such as Arduino or raspberry pi. Connect an esp8266 module to upload this data to cloud. Make this data publicly available. Create a blog to display this data along with visualizations such as graphs.

Project 3

Project Name: Flood Monitoring and Early Warning

Project Description: Deploy IoT sensors near water bodies and in flood-prone areas to monitor water levels. This data can be shared on a public platform to issue early flood warnings and assist emergency response teams.

Use IOT sensors such as ultrasonic sensor and other sensor that operates on RADAR technologies to monitor water levels. This data is then fed to any processor such as Arduino or raspberry pi with appropriate power connections. ESP8266 module is fitted to connect with internet. This data is then shared on a public platform.

Project 4

Project Name: Smart Water Management

Project Description: Implement IoT sensors to monitor water consumption in public places like parks and gardens. The data can be made available on a public platform, encouraging water conservation efforts.

Smart meters should be used to monitor the outlet of water in Pipes. These data is to be sent to internet with the help of an ESP32 processor. This data is then shared on a public platform to create awareness among the public.

Project 5

Project Name: Traffic Management

Project Description: Use IoT devices and data analytics to monitor traffic flow and congestion in real-time. This information can be accessible on a public platform or through mobile apps, aiding commuters in choosing optimal routes.

Traffic congestion monitoring solutions can use either cameras to visually capture and record car volumes or may crowdsource information from drivers' smartphones. place cameras at key locations in roadways to observe and track congestion. Image processing can be used with machine learning to learn about congestion. Other method can be to include sensors on vehicles that send location information (eg: gps sensor) to the cloud. If more that a certain number of sensors are detected in a certain place, it means there is traffic in that place. This is sensor crowdsourcing.

Project 6

Project Name: Public Transportation Optimization

Project Description: Integrate IoT sensors in public transportation vehicles to monitor ridership, track locations, and predict bus or train arrival times. This data can be shared on a public platform to improve transit services.

Use sensors such as GPS sensor to monitor location of each vehicle. This information is then fed to Arduino and then uploaded to cloud using an esp8266 module. This information is then used to monitor the locations of the public vehicle. Scheduling public transport and making this information available to the users.

Project 7

Project Name: Smart Public Restrooms

Project Description: Install IoT sensors in public restrooms to monitor occupancy and maintenance needs. Data on restroom availability and cleanliness can be made available to the public through a platform or mobile app.

You can use object detection sensors to detect the occupancy of the restrooms, and other hygiene checking sensors such as ammonia sensor, H2S sensor, turbidity sensor to detect the cleanliness of public restrooms. These data are then fed to cloud using ESP8266 module on a Arduino board. This information is then displayed and used for scheduling maintenance tasks, and to monitor restroom availability.

Project 8

Project Name: Water Quality Monitoring in Public Pools

Project Description: Employ IoT sensors to monitor water quality in public swimming pools and share the data on a public platform, ensuring a safe and healthy swimming environment for residents.

Ph sensors and other water quality sensors should be implemented to detect the water quality of the swimming pools. These data is fed to the cloud using esp8266 module on the Arduino board. This cloud data is shared in a public platforms so that people can see the water quality of the pool.

Project 9

Project Name: Noise Pollution Monitoring

Project Description: Deploy IoT sensors to measure noise pollution in public areas, providing real-time noise level data accessible to the public through a platform or mobile app.

Sound meter is connected with Arduino board to detect the sound and noise in the locality. This data is fed to cloud using esp8266 module. This data is analyzed for noise pollution levels and the result is made available in a mobile app.

Project 10

Project Name: Environmental Monitoring in Parks

Project Description: Set up IoT devices to monitor environmental conditions in public parks, such as temperature and humidity. This data can be shared on a public platform to help visitors plan their outdoor activities.

Temperature and humidity sensor is use to detect the environment conditions on public sensors using Arduino processor. The data collected is sent to cloud using esp8266 module.

This information is made available on a public platform so that people can plan their activities.