VELAMMAL
INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF INFORMATION TECHNOLOGY

Project Name: ***ENVIRONMENTAL MONITORING***

Team Name: ***Proj_224786_Team 4***

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Problem Statement:

In today's rapidly changing world,there is a growing concern about the state of environment.Climate change,pollution and natural disasters are posing significant threats to our planet and the well-being of it's inhabitants.To adress these challenges,there is a processing need for an advanced Environment Monitoring System(EMS)that can provide real-time data on key environmental parameters.This system should be capable of monitoring and reporting on factors such as air quality,temperature,humidity,water quality and more in various location and ecosystems.

Objectives:

- **Assessment Of Environmental Quality**:

  To evaluate the overall health and quality of natural ecosystems including air,water,soil and biodiversity.

- **Detection Of Pollution**:

  To identify and quantify the presence of pollutants,contaminants and hazardous subsatnces in the environment.

- **Early Warning Of Environmental Risks**:

  To provide timely warnings of potential environmental disasters,such as floods,wildfires,or chemical spills.

- **Compliance Monitoring**:

  To ensure that industrial and human activities are in compilance with environmental laws and regulations.

- **Protection Of Biodiversity**:

  To monitor and conserve biodiversity by assessing the health and populations of various species and ecosystems.

- **Resource Management**:

  To support sustainable management of natural resources such as fisheries,forests and water sources througgh data-driven decision-making.

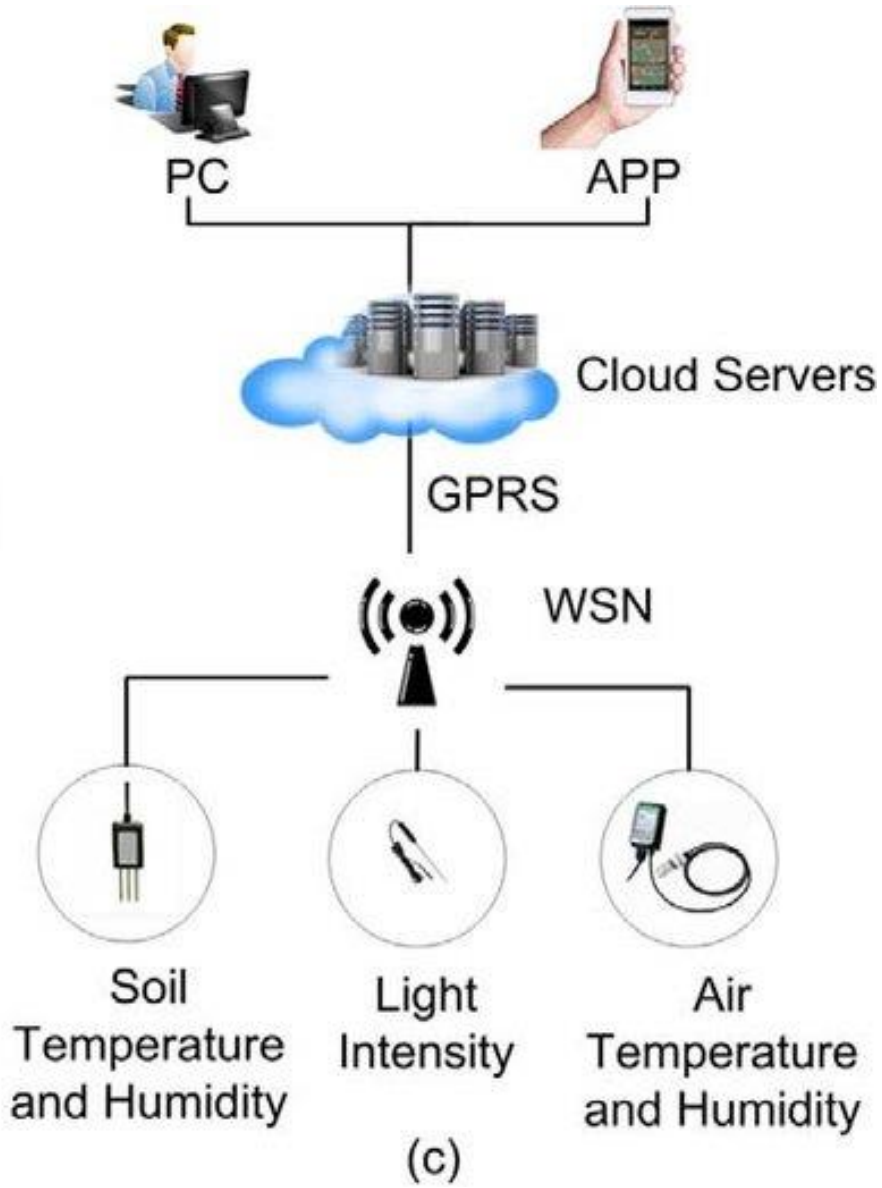
- **Public Health Protection**:

  To safeguard public health by monitoring air and water quality to detect potential health hazards.

IOT SENSOR DESIGN:

(a)

(b)



(c)

IOT Sensors Design:

There are several IOT sensors and components that are used in Environment Monitoring.some of them are as follows:

- Temperature Sensor
- Humidity Sensor
- Air Quality Sensor
- Gas Sensor
- Sound Sensor
- Soil Moisture Sensor
- Light Sensor
- Water Level Sensor
- Pressure Sensor

ENVIRONMENTAL MONITORING

Environmental Factors to Monitor

Temperature
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Humidity
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Airflow
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Power
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Smoke
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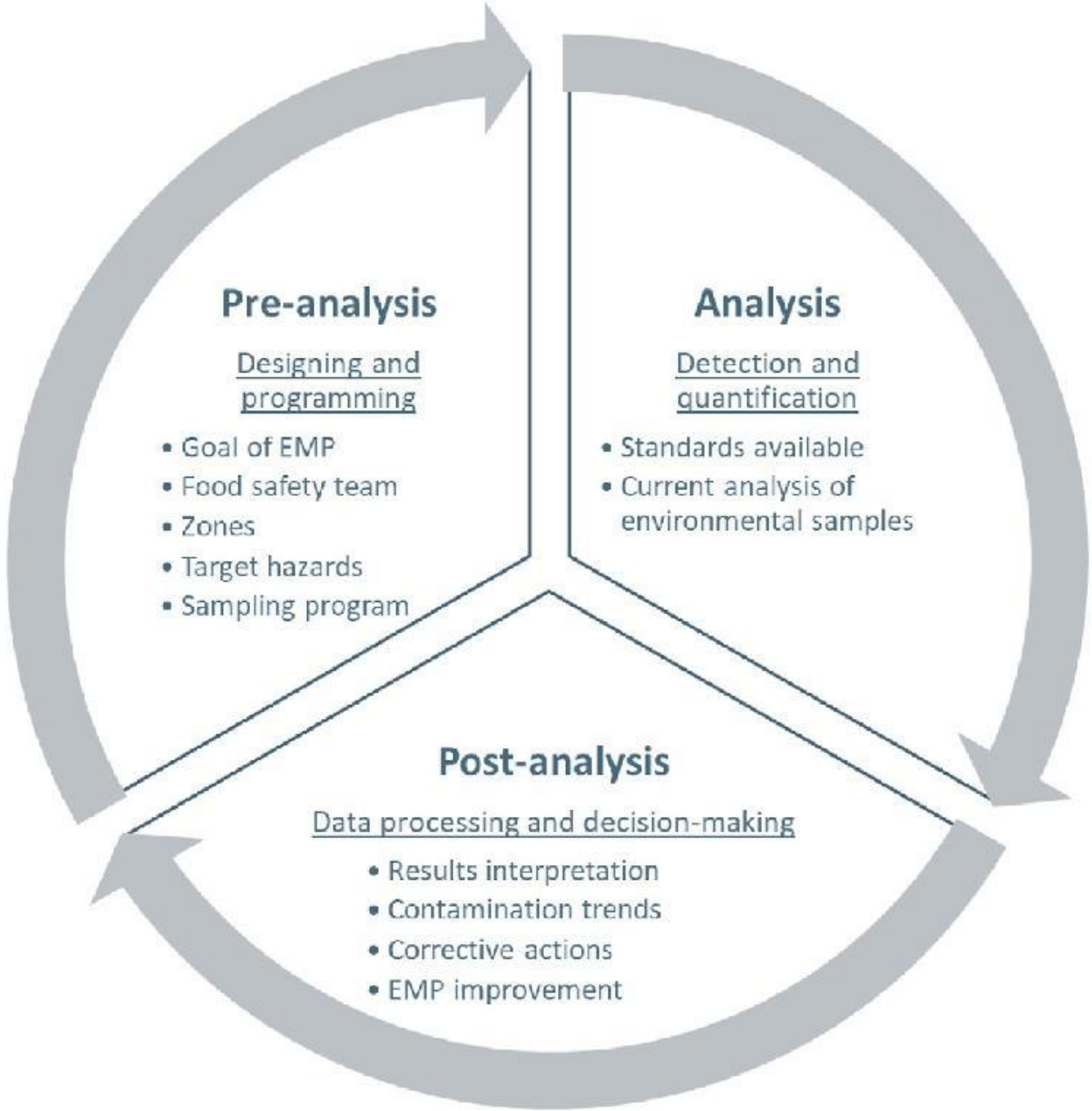
STEPS INVOLVED



Real-Time Transit Information Platform:

Creating a real time transit information platform as part of an environmental monitoring project can be valuable for various applications,especially in urban environments.Here’s how it can be implemeted:

- Data Source
- Data Processing
- User Interface
- Environmental Insights
- Communication
- Integration
- Accessibility
- Data Security and Privacy
- Continuous Improvement

INTEGRATION APPROACH:

List all the components, systems, or elements that need to be integrated. This can include hardware, software, processes, data sources, and external systems.

- Assess Compatibility
- Select Integration Technologies
- Design Integration Architecture
- Data Mapping and Transformation
- Develop Integration Code or Configurations
- Testing and Validation
- Security and Logging
- User Training and Documentation
- Change Management
- Communication and Reporting

THANK YOU