DEPARTMENT OF INFORMATION TECHNOLOGY

Project name : ENVIRONMENT 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.
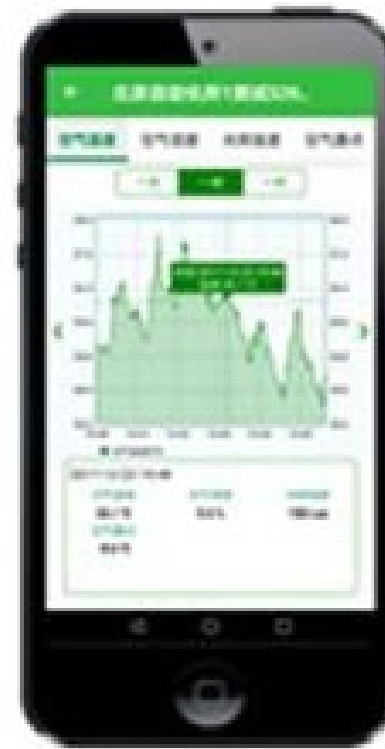- **Public Health Protection**:
    To safeguard public health by monitoring air and water quality to detect potential health hazards.
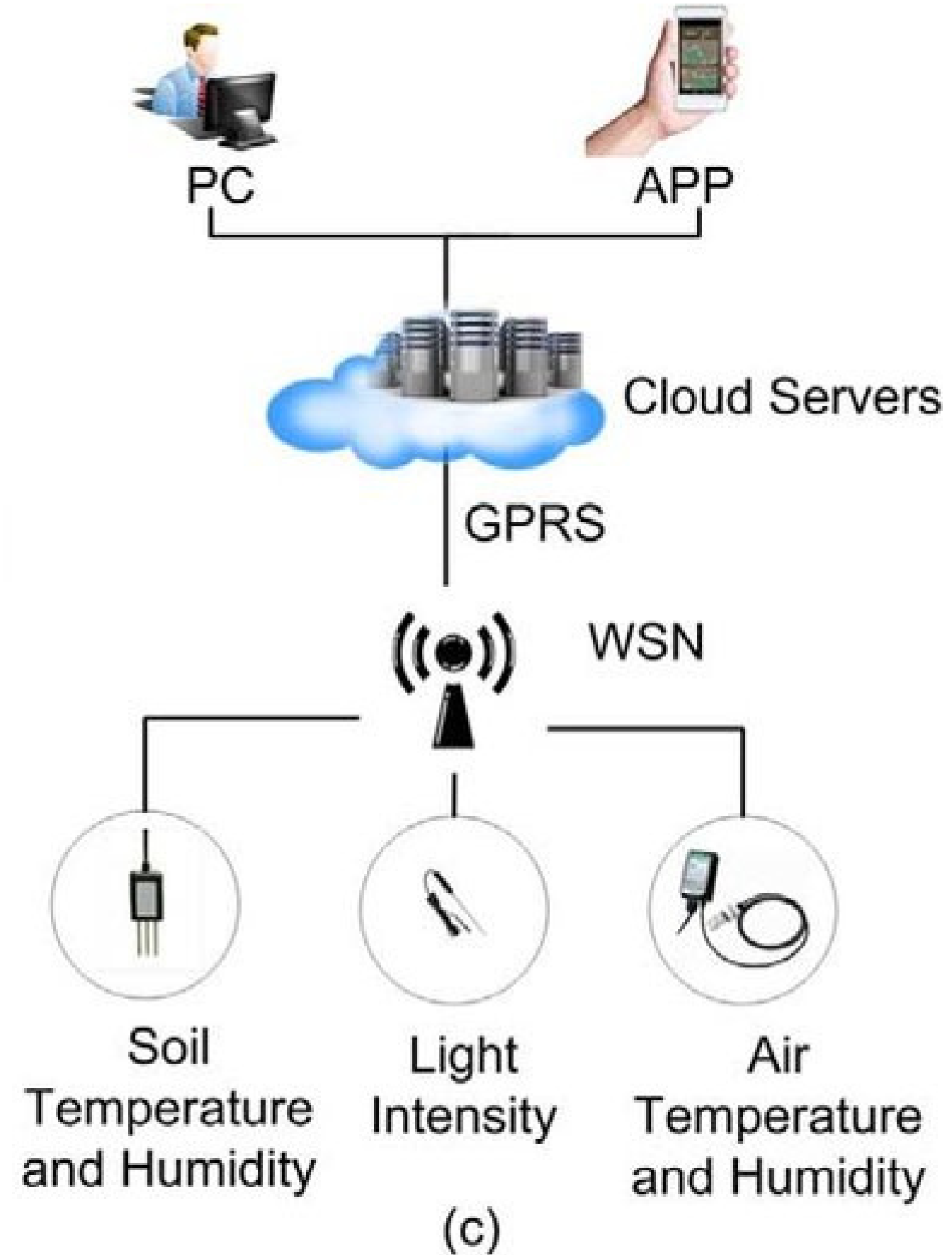
IOT SENSOR DES]

(a)

(b)

PC   APP

Cloud Servers

GPRS

WSN

Soil Temperature and Humidity

Light Intensity

Air Temperature and Humidity

(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

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