

# ENVIRONMENT MONITORING SYSTEM

## Phase 1 project

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## Phase 1: Problem Definition and Design Thinking

The scope of this document is to identify the problem and find solution for park visitors and park management to receive real time Environmental Data.

### Problem Definition:

Research has identified several challenges in the management of public parks. These issues or concerns include:

- The park management or the park visitors do not receive any information or updates on the environmental data
- This is resulting in the park visitors not being able to plan their outdoor activities or the visit to the public park
- This also has resulted in the failure of the park management to organize promotional outdoor activities and campaigns for park visitors
- This has resulted in and overall low visitor satisfaction.

### Design Thinking:

After comprehending the aforementioned issue, we will devise a solution capable of addressing it.

- An IoT based solution could immediately resolve the above issue
- We would need to identify the right Digital Humidity and Temperature Sensor, for which we would need perform extensive research on Original Equipment Manufacturers.
- The requirement also is that the IoT solution needs to be able to communicate to a public platform.
- Hence we would need internet connectivity and communication module

### Add-On features:

- Using crowd monitoring system (CMS) the crowd in the park can be monitored and updated in the application.
- Image processing cameras can be added for security and child safety
- (OWS) optical wetness sensors can be used to sense the wetness of the floor in the parks which can lead to slip-off tragedy.
- Parking space management can be done to avoid zero parking problem by using various sensors such as infrared, EM sensors, radar sensor, ultrasonic sensor.