IoT Park Environmental Monitoring

The project involves setting up IoT devices to monitor environmental conditions in public parks including temparature and humidity. The primary objective is to provide real time environmental data to park visitors through a public platforms enabling them to plan their outdoor activities accordingly. The project includes defining objectives designing the IoT sensor system. Developing the environmental monitori

Project Definition: The project aims to enhance the visitor experience in public parks by deploying IoT (Internet of Things) devices for real-time monitoring of environmental conditions, specifically

temperature and humidity. The primary goal is to provide park visitors with access to up-to-date environmental data through a public platform. This data will enable visitors to make informed decisions about their outdoor activities, ensuring a more enjoyable and comfortable experience. The project involves several key components:

- **Objective Definition**: Clearly define the project objectives, which include monitoring temperature and humidity in public parks, providing real-time data to park visitors, and enhancing their outdoor activity planning.

- **Designing IoT Sensor System**: Develop a comprehensive plan for the IoT sensor system. This includes selecting appropriate sensors, determining their

optimal locations within the parks, and specifying how data will be collected and transmitted.

- **Environmental Monitoring Platform**: Create a user-friendly platform that displays real-time environmental data collected by the IoT sensors. This platform should be accessible to the public, either through a website or a mobile application.

- **Integration with IoT Technology**: Implement the necessary infrastructure and protocols to connect the IoT sensors to the monitoring platform. This may involve setting up wireless communication, data storage, and data processing systems.

- **Programming with Python**: Utilize

Python programming to build the backend and frontend components of the environmental monitoring platform. Python is versatile and well-suited for data processing, web development, and integration with IoT devices.

Design Thinking: To design and execute this project effectively, it's important to follow a design thinking approach, which involves the following stages:

- **Empathize**: Understand the needs and preferences of park visitors. Conduct surveys, interviews, or observations to gain insights into what kind of environmental data would be most valuable to them.

- **Define**: Clearly define the problem and

objectives, as you've outlined in the project definition. Use the insights gathered during the empathize stage to guide your project goals.

- **Ideate**: Brainstorm and generate ideas for the IoT sensor system, environmental monitoring platform, and user interface. Encourage creative thinking and consider various solutions.

- **Prototype**: Create prototypes of the IoT sensor setup and the monitoring platform. Test these prototypes with potential users to gather feedback and refine your designs.

- **Test**: Continuously test and iterate on your prototypes, making improvements based on user feedback. Ensure that

the IoT devices are accurately capturing environmental data.

- Implement: Once you have refined your designs and received positive feedback, proceed with the full implementation of the project, including hardware deployment, software development, and platform integration.

- Evaluate: Regularly assess the project's performance and user satisfaction. Make adjustments as needed to maintain the quality of the environmental data and the user experience.

By following this project definition and design thinking approach, you can create a successful IoT-based environmental

monitoring system for public parks that meets the needs of park visitors and enhances their outdoor experiences.