# Project Design Phase-I Solution Architecture

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| Date | 06 May 2023 |
| Team ID | NM2023TMID20443 |
| Project Name | IoT based Weather adaptive lighting system |

**Solution Architecture:**

* The architecture of an IoT-based weather adaptive street lighting system typically consists of several layers, including the hardware layer, the communication layer, the data layer, and the application layer. Here is an overview of each layer and their components:
* Hardware layer: This layer includes the physical devices used in the system, such as sensors, controllers, and streetlights. The sensors detect the ambient light level, motion, and other environmental factors, while the controllers receive data from the sensors and adjust the brightness and duration of the streetlights accordingly.
* Communication layer: The communication layer includes the network infrastructure used to transfer data between devices. This layer typically uses wireless protocols such as Wi-Fi, Bluetooth, and cellular networks to transmit data from the sensors to the controllers and from the controllers to the cloud.
* Data layer: The data layer is responsible for collecting, storing, and analyzing data from the system. This layer typically uses a cloud-based platform to collect data from the sensors and controllers and to process it using machine learning algorithms and other analytical tools.
* Application layer: The application layer provides the user interface for the system and allows users to interact with the data and control the system. This layer typically includes a web-based dashboard or mobile app that allows users to monitor the system's performance, adjust settings, and receive alerts and notifications.
* Overall, an IoT-based weather adaptive street lighting system architecture is designed to be highly scalable, flexible, and secure, allowing it to be deployed in a wide range of environments and to adapt to changing weather conditions and user requirements over time.

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# Solution Architecture Diagram:

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