Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	13 May 2023
Team ID	NM2023TMID20443
ProjectName	IoT based Weather adaptive lighting system

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	FunctionalRequirement(Epic)	SubRequirement(Story/Sub-Task)
FR-1	**Light sensing**	Using LDRs, the system should be able to detect the amount of ambient light and change the street lights' brightness correspondingly.
FR-2	**Energy efficiency**	The system must be built to use less energy and be energy-efficient. In order to save energy and cut running expenses, the system should be able to turn off the street lights during the day or when there is a lot of ambient light.
FR-3	**Automatic control**	Without any assistance from humans, the system ought to be able to manage the street lights. Based on the amount of ambient light that the LDRs are able to detect, the system ought to be able to switch on or off the street lights.
FR-4	**Real-Time monitoring**	The street light control activities should be able to be monitored in real-time by the system. The streetlights' state, including whether or not they are on or off, should be updated by the system.

Non-functionalRequirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-FunctionalRequirement	Description
NFR-1	**Usability**	The LDR-based IoT-based street light control system is built with characteristics that make it accessible to all users and is dependable, efficient, secure, and scalable. These elements are necessary to guarantee the system's acceptance and efficiency in lowering energy use and enhancing street illumination.
NFR-2	**Security**	LDRs should be used in an IoT-based street light control system that is secure, with encryption and authentication safeguards to maintain data confidentiality and integrity. User data should be safeguarded and unauthorised access should be prevented through security features.
NFR-3	**Reliability**	The LDR-based IoT-based street light control system should operate consistently and reliably. The system must be resilient enough to operate as intended, automatically turning on and off the street lights in

		all kinds of weather. This will guarantee the system's smooth and successful operation.
NFR-4	**Performance**	Based on how effectively it satisfies the functional criteria, the IoT-based street light management system employing LDRs can be judged for performance. Light sensing, automatic street light control, real-time monitoring, energy efficiency, robustness, data collection and analysis, and remote access should all be capabilities of the system.
NFR-5	**Availability**	For the IoT-based street light management system using LDRs to be adopted and used effectively, it must be readily available. The system should be adaptable to manage rising traffic and user numbers and should be remotely accessible from any location. By doing this, the system will be available and able to change as needs do.
NFR-6	**Scalability**	To ensure the long-term efficiency of the IoT-based street light management system using LDRs, scalability is essential. The system must be built to handle rising user and traffic volumes as well as adapt to evolving requirements over time. This will guarantee that the system stays current and continues to meet its users' needs.