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

Date	07 MAY 2023
Team ID	NM2023TMID09640
Project Name	IoT Based Weather Adaptive Street Lighting System
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	**User Registration**	Registration through Form Registration through Email Registration through Social Media
FR-2	**User Confirmation**	Confirmation via Email Confirmation via OTP
FR-3	**Terms and policy**	Users should be required to accept the system's terms and policies before they can proceed with using the system.
FR-4	**User login**	Setting Up User ID and Password
FR-5	**App Permission**	The system should require users to grant permission for the system to access their location data and to interface with their connected devices, such as their smartphone or smartwatch.
FR-6	**Interfacing with device**	Connecting the device with registered app with device ID
FR-7	**Setting location**	Users should be able to set their location in the system, either by inputting their address or by allowing the system to use their device's GPS location data.
FR-8	**Database**	The system should store and manage user data, including user accounts, location data, and other relevant information, in a secure and reliable database
FR-9	**Tracking location**	Once users have set their location, the system should be able to track their location in real-time, using data from weather sensors and other sources to adjust the brightness of the streetlights based on the current weather conditions.
FR-10	**Emergency services integration**	The system could integrate with emergency services, such as police and fire departments, to provide enhanced safety and security in case of emergencies or natural disasters.
FR-11	**Energy management**	The system could include features for managing and optimizing the energy usage of the streetlights, such as by using LED lights or adjusting the brightness levels based on pedestrian or vehicular traffic patterns

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The system should be designed to be user-friendly and intuitive, with clear and concise interfaces and documentation to ensure that users can easily understand and navigate the system.
NFR-2	**Security**	The system should be designed with robust security features to protect user data and prevent unauthorized access or malicious attacks. This includes features such as encryption, authentication, and access control.
NFR-3	**Reliability**	The system should be highly reliable, with a minimal risk of downtime or system failure. This includes features such as fault tolerance, redundancy, and automatic failover.
NFR-4	**Performance**	The system should be designed to operate efficiently and quickly, with minimal latency or lag time. This includes features such as load balancing, caching, and data compression.
NFR-5	**Availability**	The system should be highly available, with a minimal risk of downtime or service interruptions. This includes features such as disaster recovery, backup and restore, and high-availability clustering.
NFR-6	**Scalability**	The system should be designed to scale up or down easily as needed, to accommodate changes in user demand or system usage. This includes features such as horizontal scaling, vertical scaling, and auto-scaling.