AUTOMATED LIGHT INTENSITY BASED ON WEATHER CONDITIONS IN PUBLIC PLACES

ABSTRACT

Automated public lighting optimizes streetlight control with real-time data analysis, cutting energy costs by up to 50% and enhancing community safety. Additionally, it creates a detailed record of energy consumption, promoting efficiency and accountability in public lighting management. Public lighting in roads and public areas are lit even during daytime resulting in the wastage of precious energy. Weather conditions play a crucial role in public lighting systems, influencing visibility and safety. Extreme weather events such as heavy rain, snow or fog can drastically reduce visibility in public spaces and on roads. Automated Public Lighting systems that are centrally controlled by IoT sensors such as light sensors, motion sensors, temperature sensors, rain sensors, energy consumption sensors can be used to optimize illumination and monitor energy consumption. Additionally, maintenance of public lighting systems is crucial, and traditional manual inspections can lead to extended downtime. IoT-based Automated public lighting systems offer real-time monitoring and quicker defect identification, minimizing downtime and enhancing system reliability by using communication and network sensors. This would dramatically result in lower operating costs and would aid in low downtime of failed lighting systems as the defective locations can be identified. It does dynamic adjustment of light intensity based on weather conditions.

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