

PROTOTYPE OF A RIVER WATER LEVEL AND DISCHARGE MONITORING SYSTEM USING ESP8266 MICROCONTROLLER

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ABSTRACT

This study presents the development of a prototype system for monitoring river water level and discharge using the ESP8266 microcontroller. The system is designed to provide real-time water level data through integrated sensors and Wi-Fi modules, enabling seamless data transmission to a remote server or the Blynk application for further analysis. Equipped with accurate water level sensors, the system plays a critical role in water resource management and early flood detection. When water levels reach critical thresholds, alerts are simultaneously triggered via an audible siren and notifications are sent through the Blynk app, allowing authorities and local communities to take preventive measures. To ensure autonomous operation, especially in remote or off-grid locations, the system is powered by a solar panel, which charges a battery that stores energy and supplies power to the device. This renewable energy integration supports sustainable and continuous monitoring without relying on external electricity sources.

Keywords: ESP8266 Water Level, Solar Panel, Blynk, Battery, Water Height