AQUAWAT: A WATER AND ELECTRICITY TRACKING APPLICATION

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ABSTRACT:

Aquawatt is a comprehensive IoT-powered solution designed to help households monitor and manage their water and electricity usage on a per-room basis. The project addresses the growing concerns of skyrocketing utility bills, resource wastage, and lack of user awareness regarding daily consumption patterns in different areas of the home—such as the kitchen, bedroom, and more.

The proposed system incorporates low-cost IoT sensors (e.g. flow meters for water and smart energy monitors or current sensors for electricity) installed in each room to continuously capture usage data. This data is transmitted via Wi-Fi or other communication protocols to a centralized backend platform, where it is processed, stored, and visualized using a full-stack web application. On the Aquawatt web dashboard, users can view real-time and historical usage data segmented by room and resource, together with intuitive charts and summaries.

Aquawatt empowers users with actionable insights into their daily consumption habits, enabling them to detect abnormal usage, optimize routines, and ultimately reduce utility bills. Drawing inspiration from existing smart meter and home energy monitoring systems—which have demonstrated up to 15% reductions in electricity usage through real-time feedback.

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