

## **IOT BASED SMART WATER CONSUMPTION MONITORING AND MANAGEMENT SYSTEM**

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The earth has a plenitude of water in different form and places. However, just a little percentage (about 0.3%) is usable by humans. The other 99.7% is in the seas, soils, icecaps, and coasting in the atmosphere. Therefore, the water utilization must be managed properly. This research focuses on an Internet of Things (IoT) based water monitoring and management system through which wastage of water can be identified and controlled in efficacious manner at homes, colleges, hospitals, industries, shops, and malls. In the proposed system, in order to track the water consumptions, Flow rate sensor are placed at every water outlet. Server collects the information continuously from sensors through Wi-Fi module. Collected data are processed to find the total water consumption of each water outlet of entire building. Additionally, users can set a limit for any water outlet and when water is used at an excess, an alert is sent to the user to indicate it. If there is any water wastage occurs, user can easily identify it. The user can keep a constant track of water consumption via a smart phone or laptop with an internet connection. Thus, the proposed water management and monitoring system in this study allows the individuals, organizations to keep track of their water consumption and save water from wastage and unnecessary consumption. The proposed model of the research was tested in a simulated environment and proved to be accurate in all type of situations. It is obviously believed that the suggested system can improve the water management and reduce the wastage and unwanted usage of water.

**Keywords:** *Internet of Things (IoT), Water Consumption Monitoring, Arduino Water Flow Sensor, Server*