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| **Abstract:** |  |
| As a consequence of rising urbanization and industrial growth, water contamination and degradation are developing at an alarming rate. The water scarcity around the world necessitates a long-term strategy to make the most of it. Traditionally, water quality is assessed by collecting water samples by hand and then testing and analyzing them in a laboratory setting. This paper examines how cutting-edge technology, such as the Internet of Things (IoT), can provide a sustainable and cost-effective method of monitoring multiple water parameters in real time. The proposed system was used to calculate the turbidity, TDS, pH level, and temperature of 30 different water samples with success. The turbidity level was measured in nephelometric turbidity units (NTU) and then transmitted via wireless fidelity (Wi-Fi) networks to an Internet of Things—cloud computing platform, where it could be viewed using an Android smartphone or PC. The experiments demonstrated that the monitoring system was capable of continuously monitoring the pH level, total dissolved solids (TDS), and temperature of water from various sources at different times, thereby providing safe water for industrial, agricultural, and commercial purposes. The cost and complexity of implementation are minimal due to the use of sensors and the Arduino Nano microcontroller, making it simple to validate the efficacy of the built system. | |