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(57) Abstract :
 A water management system (100) for household conservation is disclosed. The system (100) includes an ultrasonic sensor (102) attached to a water tank for monitoring water levels, image sensors (104) positioned at washing areas and sinks to capture user activities, and water flow meters (106, 108) attached to showers and toilets to measure flow rates. The system receives data from sensors, identifies users, and analyses water usage patterns. This evaluates total water consumption and provides real-time feedback on a display device (114). Additionally, the system (100) includes features such as triggering alerts for low water levels and emitting sound alerts based on usage patterns. Moreover, machine learning techniques are utilized to optimize conservation strategies based on historical usage data. This system (100) facilitates informed decision-making and promotes sustainable water management practices in households.

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