

# Hot Water Dispenser System using RFID with Temperature Controlling for College Hostel

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**Abstract:** The "Hot Water Dispenser System utilizing RFID for Water Temperature Regulation in College Hostels" introduces an innovative solution aimed at improving the efficiency and user satisfaction of hot water distribution within college hostels. This system adopts Radio-Frequency Identification (RFID) technology as a secure means of access, assigning each student a unique RFID card for personalized entry. Furthermore, it integrates precise water temperature control facilitated by a dedicated temperature sensor, granting users the ability to adjust to their preferred temperature settings. To ensure equitable usage and optimize energy consumption, a policy of single-use per day per RFID card is enforced. The system's core operations are managed by an Arduino microcontroller, orchestrating seamless communication among the RFID reader, temperature sensor, relay, water pump, and a real-time display module. This module furnishes users with immediate feedback regarding water temperature, user credentials, and overall system status. By amalgamating security, convenience, and energy efficiency, this initiative not only meets the immediate needs of hostel dwellers but also espouses contemporary principles of sustainability and prudent resource stewardship.

**Keywords:** RFID, Technology, Hot water dispenser, College hostel, Temperature control

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