

**DESIGN AND DEVELOPMENT OF A COFFEE AND TEA  
VENDING MACHINE WITH COIN PAYMENT SYSTEM BASED  
ON ARDUINO NANO**

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**ABSTRACT**

*The rapid advancement of technology has significantly impacted various aspects of human life, including the culinary and marketing sectors, which continue to evolve. Technology plays a crucial role in simplifying various activities, leading to an increased demand for quick and practical solutions. This research aims to design a coffee and tea vending machine based on Arduino Nano. The machine displays the number of coins inserted and the beverage volume on an LCD screen. Users can select a menu by pressing a push button, which activates the motor pump to dispense water through a faucet. The flow meter sensor measures the flow rate and volume of the dispensed water. Once the measured volume reaches the target, the motor pump stops, and the solenoid valve closes. Testing results show that the average discrepancy in the flow meter readings is around 5.27 ml to 9.71 ml, with an average error rate ranging from 5.06 % to 8.56 %. The power consumption of the device is approximately 0.7718 kWh.*

**Keywords:** *Technology, Coffee and tea vending machines, Arduino Nano, Flow meter sensors.*