

Safety and Security Integrated to Smart School Tracking System using IoT

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Abstract: *To integrate various sensors and actuators within educational environments has paved the way for to the development of Smart School Systems, revolutionizing traditional schooling paradigms. This paper presents a comprehensive approach to designing and implementing a Smart School System using Arduino Uno Board, Fire Sensor, RFID, Servo Motor, and Ultrasonic Sensor technologies. The system aims to enhance safety, security[4], and operational efficiency within educational institutions through the seamless integration of IoT (Internet of Things) devices. The fire sensor component ensures prompt detection of fire hazards, triggering timely alerts and evacuation protocols to safeguard students, staff, and school facilities. RFID technology facilitates automated attendance management and access control, streamlining administrative processes while ensuring accurate tracking of personnel movement. Servo motors enable automated door control mechanisms, enhancing accessibility and security[4] throughout the school premises. Ultrasonic sensors contribute to efficient space utilization and obstacle detection, optimizing navigation within the school environment. The central control unit, powered by the Arduino Uno Board, orchestrates the functionalities of all integrated components, providing administrators with real-time insights and responsive capabilities. This Smart School System [2] represents a transformative solution that prioritizes safety, efficiency, and innovation, fostering an interactive and the conducive learning atmosphere for the students and educators alike.*

Keywords: Smart School, sensors ,IoT , Arduino Uno, RFID , Servo Motor ,Ultrasonic, Motor.