

School Bell Ring with Digital Timetable Display

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Abstract: This project presents an IoT-based automatic school bell system integrated with a digital timetable display using ESP32, RTC module, buzzer, and WS2812 pixel LEDs. The system is designed to automate school bell ringing according to a predefined timetable while displaying the current period and upcoming schedule on an LED screen. The RTC module ensures accurate timekeeping, and the ESP32 controls the bell and display based on stored timetable data. Additionally, an IoT-based interface allows remote timetable updates via a mobile app or web platform, offering flexibility for schedule changes. The WS2812 pixel LEDs enhance visibility by displaying alerts and visual indicators for upcoming classes. This system reduces manual intervention, ensures precise bell timing, and improves school management efficiency

Keywords: ESP32, Pixel, automation, IoT and RTC

