IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 3, February 2026
Impact Factor: 8.2

Smart School Bell with Timetable Display

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Abstract: *The Smart School Bell with Timetable Display is an automated system designed to modernize the traditional school bell mechanism and improve the overall management of academic schedules. In most educational institutions, bell systems are still operated manually or use simple timers that do not provide any visual information about the ongoing or upcoming periods. This often leads to human errors, delayed bells, confusion during schedule changes, and increased workload for administrative staff. The proposed system aims to overcome these limitations by introducing an intelligent, programmable, and reliable bell system integrated with a real-time timetable display.*

One of the major advantages of the Smart School Bell with Timetable Display is the elimination of manual intervention. This reduces the possibility of missed bells and ensures uniformity and punctuality across all classes. It also helps administrators save time and effort that would otherwise be spent managing bell schedules manually.

Moreover, the display provides clear and continuous information to students and teachers, improving communication and time awareness within the campus The system can be further extended to include advanced features such as holiday scheduling, emergency alert messages, special announcements, and wireless timetable updates. With minor enhancements, it can also be integrated into a larger smart campus or Internet of Things based environment for centralized monitoring and control.

Keywords: *Smart School Bell, Automated bell system, Timetable display system, Microcontroller-based system, Real-time clock (RTC), Digital scheduling, Embedded system, automatic class scheduling, Display module, School automation*

DOI: 10.48175/IJARSCT-31342