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 5, Issue 1, April 2025
Impact Factor: 7.67

RTC based Countdown Timer for Exam

Ms. Ashwini S. Chame, Ms. Namrata K. Gujar, Ms. Saniya N. Rojewale,
Ms. Pranali K. Bansode and Prof. Mrs. Anjali I. Yerate
Students, Department of Electronics and Telecommunication
Professor, Department of Electronics and Telecommunication
Vishweshwarayya Abhiyantriki Padvika Mahavidyalaya, Almala, India

Abstract: *This project implements a Real-Time Clock (RTC)-based countdown timer specifically designed for exams. The system is built using an Atmega328 microcontroller, a DS1307 RTC module, an I2C-based LCD display, and a MAX7219-based 7-segment LED display. The countdown timer allows users to set the exam duration using a potentiometer and initiate the countdown with a push button.*

The system continuously displays the real-time clock and date on the LCD while also showing the countdown timer on the MAX7219 7-segment display. A buzzer provides audio feedback at key moments such as countdown initiation, completion, and time adjustments. The system includes an interactive date and time-setting mechanism controlled via tactile push buttons.

For power, the system utilizes a 12-0-12 step-down transformer, a center-tap rectifier with 1N4007 diodes, and voltage regulation via a 7805 regulator with capacitors for stability. The setup ensures reliable operation with an uninterrupted power supply.

Keywords: RTC module , ATMEGA328, control panel

DOI: 10.48175/IJARSCT-24849