

Digital Clock User Manual

Features

- Real-Time Clock display (HH:MM:SS)
- Set and display Alarm time
- Countdown Timer with buzzer alert
- Stopwatch with start, pause, reset
- Buzzer alerts for alarm and timer
- 5-button LCD Keypad Shield interface
- Finite State Machine (FSM) based control

Controls

Use the built-in buttons on the LCD Keypad Shield:

- SELECT: Confirm / Enter mode
- LEFT / RIGHT: Switch between Hour / Minute
- UP / DOWN: Adjust values or navigate
- RESET: Restart the system

Modes & Navigation

NORMAL MODE:

Displays current time and alarm. SELECT to enter Set Time. UP -> Stopwatch. DOWN -> Timer.

SET TIME MODE:

LEFT/RIGHT to choose Hour/Minute. UP/DOWN to adjust. SELECT to save.

SET ALARM MODE:

Same controls as Set Time. SELECT to activate alarm.

STOPWATCH MODE:

SELECT to start/pause. UP to reset. DOWN to exit.

TIMER MODE:

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Set duration with UP/DOWN. SELECT to start. Timer auto-ends with buzzer.

Wiring Overview

- LCD Keypad Shield stacks on Arduino Uno
- DS1307 RTC: SDA -> A4, SCL -> A5, VCC -> 5V, GND -> GND
- Buzzer: + -> D11, - -> GND

Maintenance

- Ensure RTC has battery for time retention
- Avoid disconnecting components during operation
- Keep LCD and buttons clean and dry