Report on

‘Binary Clock’

By

N Pravesh

Table of Contents:

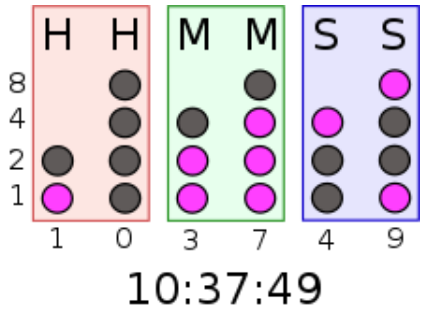
Objective:

To construct a clock that can be used to display time in a binary format.

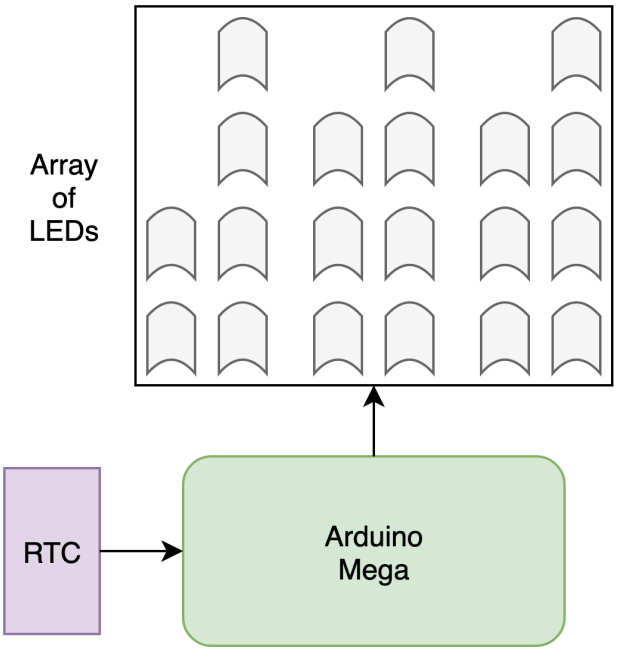
Description:

This project is used to display time in the form of binary digits. This would be a little difficult for the person who sees it for the first time but it becomes easier once he learns it. This clock contains six columns, where a group of two columns is used to determine the time. The first two columns are used to obtain the seconds, the second two columns are used to determine minutes and the rest two columns are used to determine hours.

Examples:



Block Diagram:



System Requirement Specification

Hardware Requirement:

- LEDs x 20
- Resistors
- Arduino Mega
- RTC DS3231
- Jumper cables

Software Requirement:

- Arduino IDE
    - Library: 1. DS3231.h

Working Principle:

The DS3231 RTC (real-time clock) module is used to obtain the current time. This current time is then processed using Arduino and shown in the form of LEDs.

Circuit Connections:

- Connection of Arduino to RTC DS3231:
    - A4(SDA) - SDA
    - A5(SCL) - SCL
    - 5v - Vcc
    - Gnd - Gnd
- Connection of Arduino to 20 LEDs
    - 2 - LED 1
    - 3 - LED 2
    - 4 - LED 3
    - 5 - LED 4
    - 6 - LED 5
    - 7 - LED 6

- 8 - LED 7
- 9 - LED 8
- 10 - LED 9
- 11 - LED 10
- 12 - LED 11
- 13 - LED 12
- 22 - LED 13
- 23 - LED 14
- 24 - LED 15
- 25 - LED 16
- 26 - LED 17
- 27 - LED 18
- 28 - LED 19
- 29 - LED 20

Result:

The result of the project Binary Clock is verified and it satisfied all my requirements without any exceptions.