1. **Real Time Clock Using DS1307 RTC with Arduino and LCD**
2. **Block Diagram:-**

Microcontroller

DS1307

RTC(Real Time Clock)

LCD Display(16\*2)

1. **Tables:-**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **s.no.** | **Discription** | **Name** | **Type** | **Data Direction** | **Specification** | **Remarks** |
| **1.** | **LCD** | lcd | Output | DO | 5VDC |  |
| **2.** | **DS1307 RTC** | Ds1307 RTC Module | Input | DI | 4MHZ |  |

1. **Flow Chart:-**

START

Initialize the DS1307 RTC Module And LCD In Arduino

RTC\_Module==1

YES

LCD-Displays Current Date And Time

NO

LCD-Couldn’t Running RTC Module

1. **C Code:-**

#include <Wire.h>

#include <LiquidCrystal.h>

#include "RTClib.h"

RTC\_DS1307 rtc;

const int rs=7,en=6,d4=5,d5=4,d6=3,d7=2;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7); // (rs, e, d4, d5, d6, d7)

char Days\_per\_Year\_in\_week[7][12] = {"Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat"};

void setup ()

{

Serial.begin(9600);

lcd.begin(16, 2);

if (! rtc.begin())

{

lcd.print("Couldn't find RTC");

while (1);

}

if (! rtc.isrunning())

{

lcd.print("RTC is NOT running!");

}

rtc.adjust(DateTime(F(\_\_DATE\_\_), F(\_\_TIME\_\_)));//auto update from computer time

//rtc.adjust(DateTime(Year,Month,Date, Hours, Minutes, Seconds));// to set the time manualy

}

void loop ()

{

DateTime now = rtc.now();

lcd.setCursor(0, 1);

lcd.print(now.hour());

lcd.print(':');

lcd.print(now.minute());

lcd.print(':');

lcd.print(now.second());

lcd.print(" ");

lcd.setCursor(0, 0);

lcd.print(Days\_per\_Year\_in\_week[now.Days\_per\_Year\_in\_week()]);

lcd.print(" ,");

lcd.print(now.day());

lcd.print('/');

lcd.print(now.month());

lcd.print('/');

lcd.print(now.year());

}

1. **Circuit Diagram and Simulation:-**