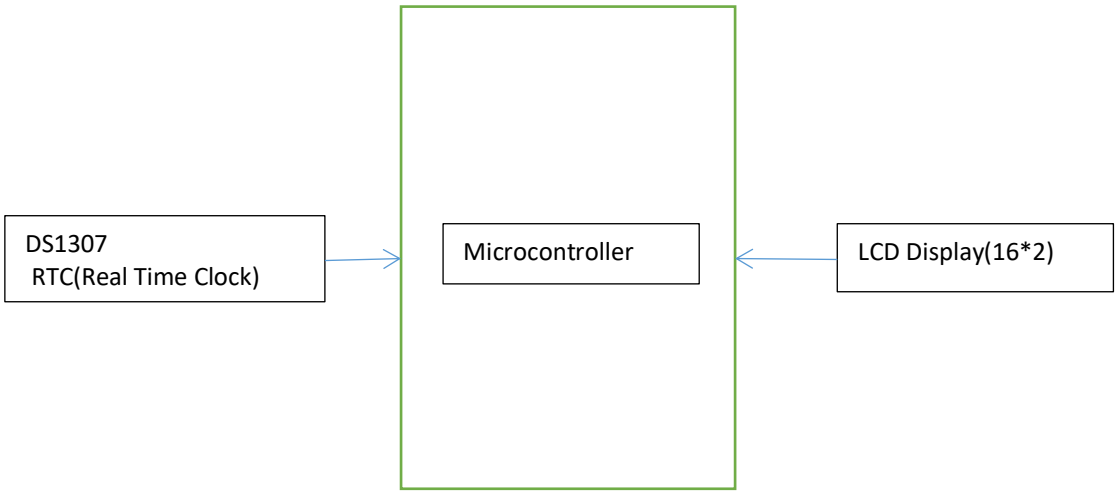
## 3. Real Time Clock Using DS1307 RTC with Arduino and LCD

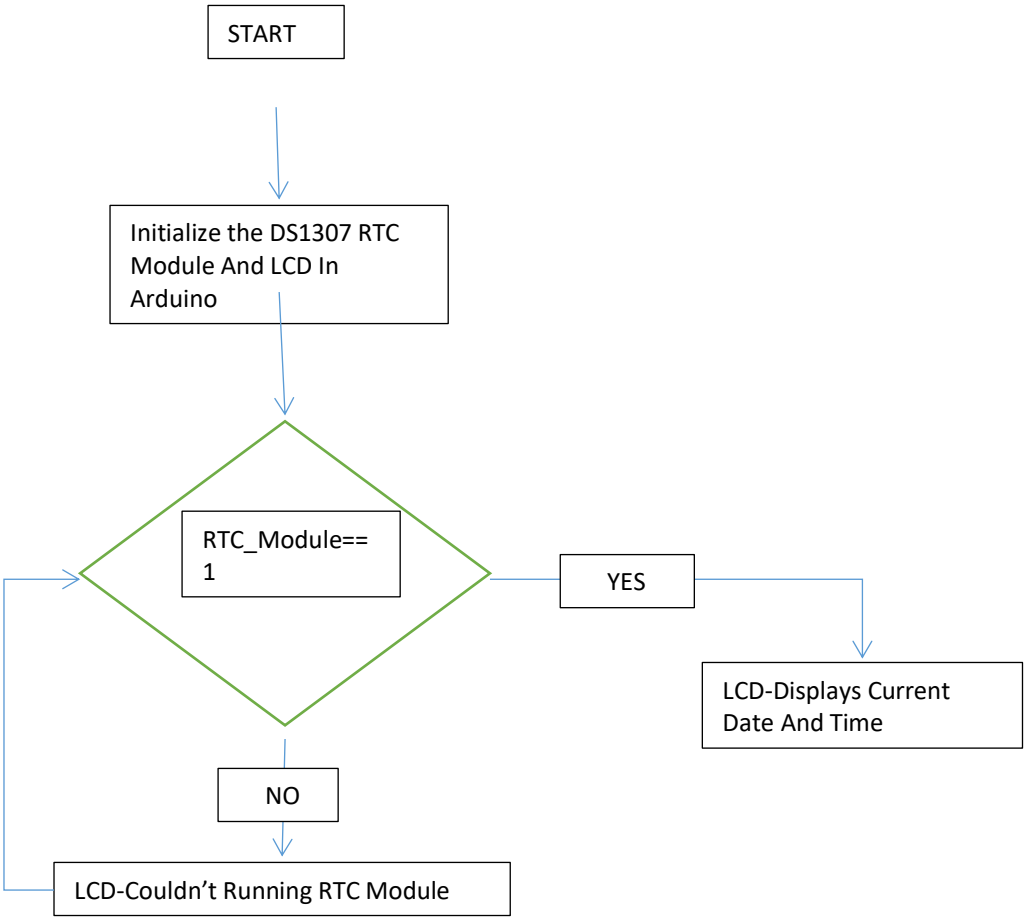
### 1. Block Diagram:-




### 2. 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 | |

## 3. 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

**4. 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());

}
```

## 5. Circuit Diagram and Simulation:-