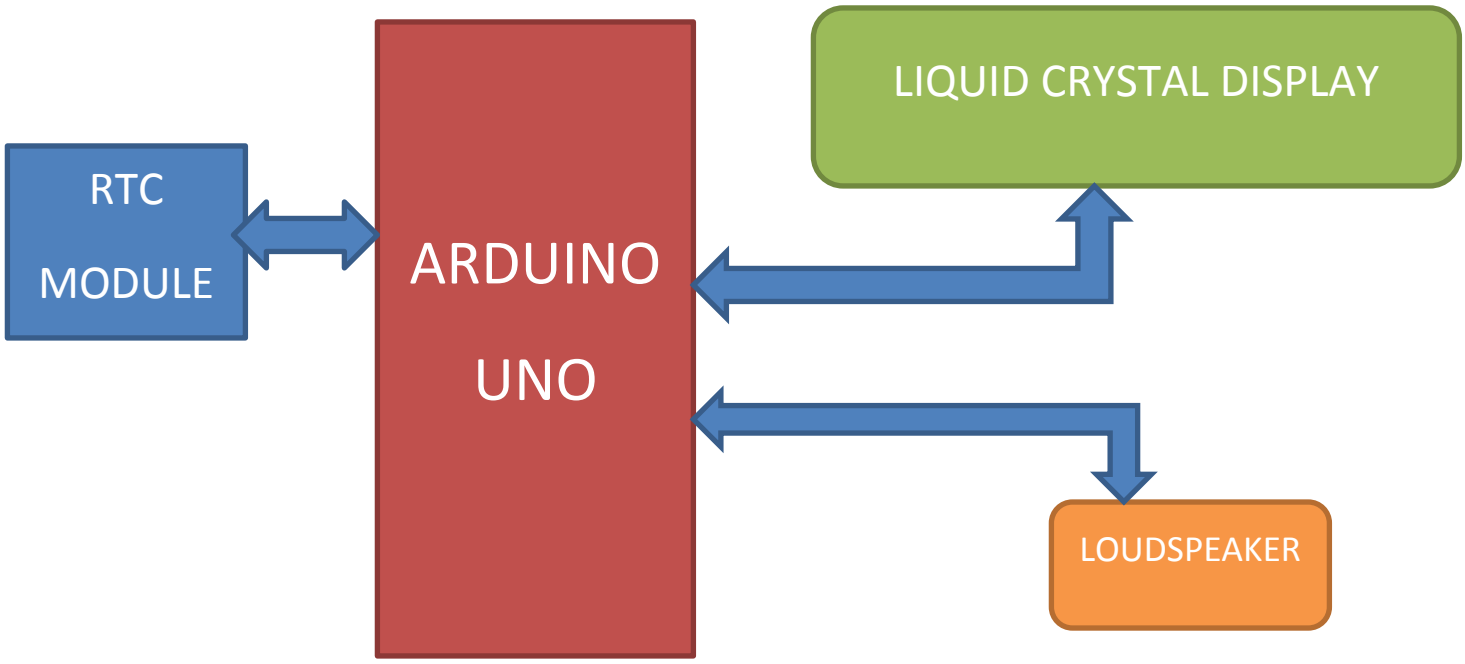
“College bell using ARDUINO and RTC module”

1.BLOCK DIAGRAM OF COLLEGE BELL----



RTC MODULE – In this project RTC module is used DS1307.It is connected to arduino analog pin A4(SDA), A5 (SCL) and DS is connected to digital pin(2) of arduino.

This is predefined connection with arduino.

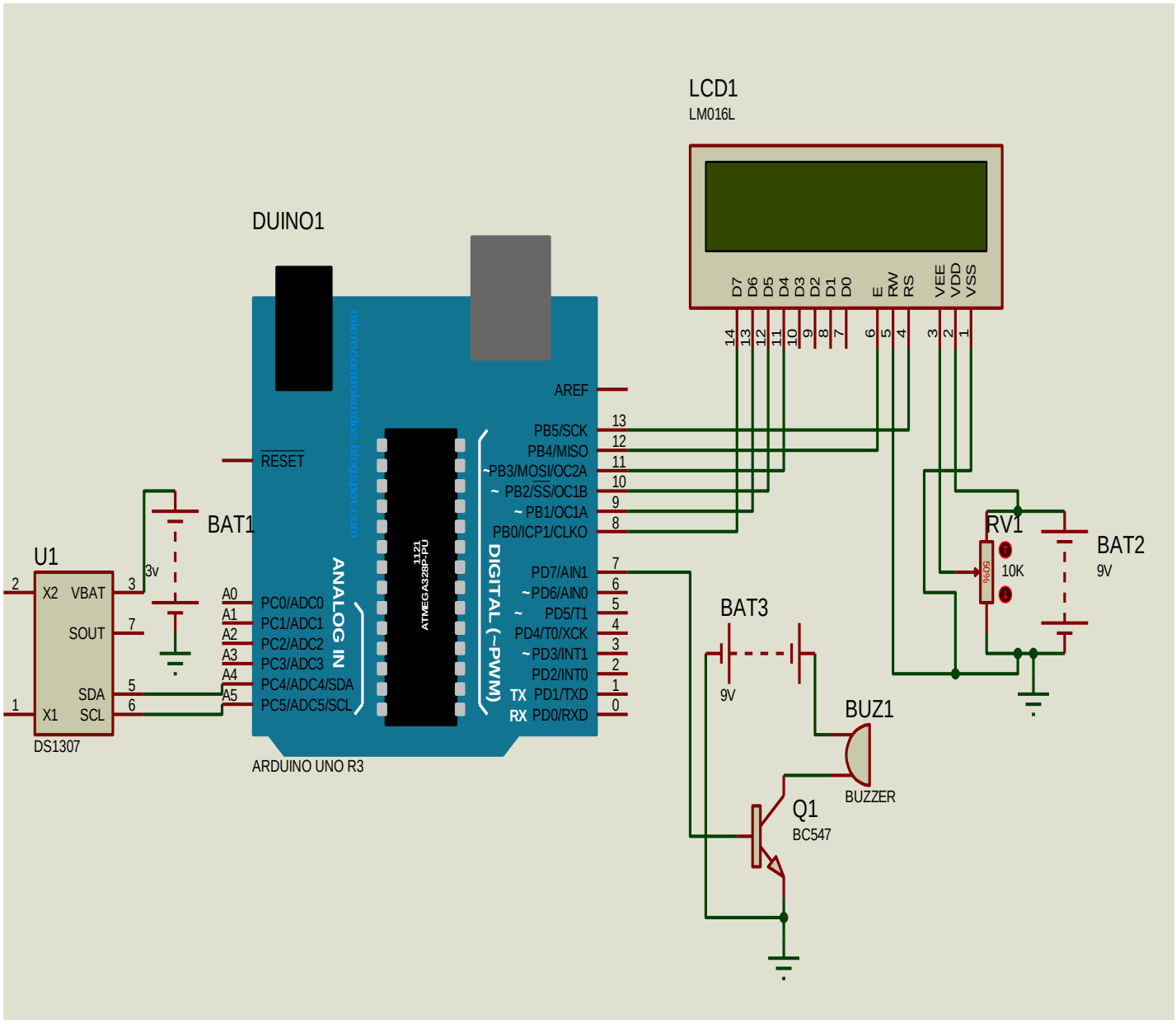
Liquid crystal display- LCD diplay is used 16*2 at which we print

DATE,TIME,DAY OF THE WEEK and also print “DEVICE IS TURN ON” when alarm is on.

LOUDSPEAKER- When alarm is on the LOUDSPEAKER produces a signal.

LOUDSPEAKER SPECIFICATION- 4 ohm,15 watt.

2.CIRCUIT DIAGRAM OF COLLEGE BELL:



SOURCE CODE OF COLLEGE BELL:

```
#include <Wire.h>

#include "RTClib.h"

#include <LiquidCrystal.h>

#include<EEPROM.h>

LiquidCrystal lcd(13,12,11,10,9,8);

RTC_DS1307 rtc;

#define relay 7

char daysOfTheWeek[7][12] = {"Sunday", "Monday", "Tuesday",
"Wednesday", "Thursday", "Friday", "Saturday"};

void setup () {

lcd.begin(16,2);

while (!Serial); // for Leonardo/Micro/Zero

Serial.begin(9600);

Wire.begin();

digitalWrite(relay,LOW);

if (! rtc.begin()) {

Serial.println("Couldn't find RTC");

while (1);

}
```

```
if (! rtc.isrunning()) {
Serial.println("RTC is NOT running!");
\// following line sets the RTC to the date & time this sketch was compiled
// rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
// This line sets the RTC with an explicit date & time, for example to set
// January 21, 2014 at 3am you would call:
//rtc.adjust(DateTime(2019, 3, 3, 20, 0, 0));
}
//rtc.adjust(DateTime(2019, 3, 3, 20, 0, 0));
rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
}
void loop () {
DateTime now = rtc.now();
Serial.print(now.year(), DEC);
Serial.print('/');
Serial.print(now.month(), DEC);
Serial.print('/');
Serial.print(now.day(),DEC);
Serial.print(" (");
Serial.print(daysOfTheWeek[now.dayOfTheWeek()]);
```

```
Serial.print(") ");
Serial.print(now.hour(), DEC);
Serial.print(':');
Serial.print(now.minute(), DEC);
Serial.print(':');
Serial.print(now.second(), DEC);
Serial.println();
lcd.setCursor(0,0);
lcd.print(now.year(), DEC);
lcd.print('/');
lcd.print(now.month(), DEC);
lcd.print('/');
lcd.print(now.day(), DEC);
lcd.print(" (");
lcd.setCursor(8,0);
lcd.print(daysOfTheWeek[now.dayOfTheWeek()]);
lcd.print(") ");
lcd.setCursor(8,1);
lcd.print(now.hour(), DEC);
lcd.print(':');
```

```
lcd.print(now.minute(), DEC);
lcd.print(':');
lcd.print(now.second(), DEC);
lcd.println();
Serial.print(" since midnight 1/1/1970 = ");
Serial.print(now.unixtime());
Serial.print("s = ");
Serial.print(now.unixtime() / 86400L);
Serial.println("d");
if(now.hour()== 10 && now.minute()==00&& now.second()==00)
{
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 10 && now.minute()== 50 && now.second()==00)
```

```
{
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 11 && now.minute()== 40 && now.second()==00){
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 12 && now.minute()== 30 && now.second()==00){
lcd.clear();
```

```
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 13 && now.minute()== 20 && now.second()==00){
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 13 && now.minute()== 40 && now.second()==00){
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
```

```
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 14 && now.minute()== 25 && now.second()==00){
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 15 && now.minute()== 25 && now.second()==00)
{
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
```

```
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 16 && now.minute()== 25 && now.second()==00)
{
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
if(now.hour()== 17 && now.minute()== 00 && now.second()==00)
{
lcd.clear();
lcd.setCursor(0,1);
lcd.print(" Device Turn ON ");
digitalWrite(relay,HIGH);
```

```
delay(1000);
digitalWrite(relay,LOW);
lcd.clear();
}
}
```