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//PART ONE
//Arduino 1.0+ Only
//Arduino 1.0+ Only
//2nd Example - resetting time
//http://bildr.org/2011/03/ds1307-arduino/

#include "Wire.h"
#define DS1307_ADDRESS 0x68
byte zero = 0x00; //workaround for issue #527
int switch1 = 2;

int ledPin1 = 1;
int ledPin3 = 3;
int ledPin4 = 4;
int ledPin5 = 5;
int ledPin6 = 6;
int ledPin7 = 7;
int ledPin8 = 8;
int ledPin9 = 9;
int ledPin10 = 10;
int ledPin11 = 11;
int ledPin12 = 12;
int ledPin13 = 13;
int ledPin = 0;

void setup(){
  Wire.begin();
  Serial.begin(9600);
  // setDate(); //MUST CONFIGURE IN FUNCTION
  pinMode(switch1, INPUT_PULLUP);

  pinMode(ledPin1, OUTPUT);
  pinMode(ledPin3, OUTPUT);
  pinMode(ledPin4, OUTPUT);
  pinMode(ledPin5, OUTPUT);
  pinMode(ledPin6, OUTPUT);
  pinMode(ledPin7, OUTPUT);
  pinMode(ledPin8, OUTPUT);
  pinMode(ledPin9, OUTPUT);
  pinMode(ledPin10, OUTPUT);
  pinMode(ledPin11, OUTPUT);
  pinMode(ledPin12, OUTPUT);
  pinMode(ledPin13, OUTPUT);
  pinMode(ledPin, OUTPUT);
}

```

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void loop(){
  printDate();
  delay(1000);

}

void setDateTime(){

  byte second = 10; //0-59
  byte minute = 45; //0-59
  byte hour = 02; //0-23
  byte weekDay = 02; //1-7
  byte monthDay = 17; //1-31
  byte month = 12; //1-12
  byte year = 12; //0-99

  Wire.beginTransaction(DS1307_ADDRESS);
  Wire.write(zero); //stop Oscillator

  Wire.write(decToBcd(second));
  Wire.write(decToBcd(minute));
  Wire.write(decToBcd(hour));
  Wire.write(decToBcd(weekDay));
  Wire.write(decToBcd(monthDay));
  Wire.write(decToBcd(month));
  Wire.write(decToBcd(year));

  Wire.write(zero); //start

  Wire.endTransmission();

}

byte decToBcd(byte val){
// Convert normal decimal numbers to binary coded decimal
return ( (val/10*16) + (val%10) );
}

byte bcdToDec(byte val) {
// Convert binary coded decimal to normal decimal numbers
return ( (val/16*10) + (val%16) );
}

void printDate(){

```

```

// Reset the register pointer
Wire.beginTransaction(DS1307_ADDRESS);
Wire.write(zero);
Wire.endTransmission();

Wire.requestFrom(DS1307_ADDRESS, 7);

int second = bcdToDec(Wire.read());
int minute = bcdToDec(Wire.read());
int hour = bcdToDec(Wire.read() & 0b111111); //24 hour time
int weekDay = bcdToDec(Wire.read()); //0-6 -> sunday - Saturday
int monthDay = bcdToDec(Wire.read());
int month = bcdToDec(Wire.read());
int year = bcdToDec(Wire.read());

//print the date EG 3/1/11 23:59:59
Serial.print(month);
Serial.print("/");
Serial.print(monthDay);
Serial.print("/");
Serial.print(year);
Serial.print(" ");
Serial.print(hour);
Serial.print(":");
Serial.print(minute);
Serial.print(":");
Serial.println(second);

//hours only show from 1 - 8
if (hour == 1)
{
digitalWrite(ledPin1, HIGH);
Serial.print("pin1 is high");
}

if (hour == 2)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
}

if (hour == 3)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
}

```

```
digitalWrite(ledPin4, HIGH);
}

if (hour == 4)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
digitalWrite(ledPin4, HIGH);
digitalWrite(ledPin5, HIGH);
}

if (hour == 17)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
digitalWrite(ledPin4, HIGH);
digitalWrite(ledPin5, HIGH);
digitalWrite(ledPin6, HIGH);
Serial.println("hour 5 in da house");
}

if (hour == 6)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
digitalWrite(ledPin4, HIGH);
digitalWrite(ledPin5, HIGH);
digitalWrite(ledPin6, HIGH);
digitalWrite(ledPin7, HIGH);
}

if (hour == 7)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
digitalWrite(ledPin4, HIGH);
digitalWrite(ledPin5, HIGH);
digitalWrite(ledPin6, HIGH);
digitalWrite(ledPin7, HIGH);
digitalWrite(ledPin8, HIGH);
}

if (hour == 8)
{
digitalWrite(ledPin1, HIGH);
digitalWrite(ledPin3, HIGH);
```

```
digitalWrite(ledPin4, HIGH);
digitalWrite(ledPin5, HIGH);
digitalWrite(ledPin6, HIGH);
digitalWrite(ledPin7, HIGH);
digitalWrite(ledPin8, HIGH);
digitalWrite(ledPin9, HIGH);
}

//now time for minutes

if (minute >=0 && minute <=9)
{
digitalWrite(ledPin10, HIGH);
}

if (minute >=10 && minute <=19)
{
digitalWrite(ledPin10, HIGH);
digitalWrite(ledPin11, HIGH);
}

if (minute >= 20 && minute <=29)
{
digitalWrite(ledPin10, HIGH);
digitalWrite(ledPin11, HIGH);
digitalWrite(ledPin12, HIGH);
}

if (minute >= 30 && minute <=39)
{
digitalWrite(ledPin10, HIGH);
digitalWrite(ledPin11, HIGH);
digitalWrite(ledPin12, HIGH);
digitalWrite(ledPin13, HIGH);
}

if (minute >= 40 && minute <= 49)
{
digitalWrite(ledPin10, HIGH);
digitalWrite(ledPin11, HIGH);
digitalWrite(ledPin12, HIGH);
digitalWrite(ledPin13, HIGH);
digitalWrite(ledPin, HIGH);
}
//nothing for 50 to 59 right now since I have need to use one board
```

```
if(digitalRead(switch1) == LOW) //button was pressed
{
  if (minute >=0 && minute<= 10)
  {
    if (minute == 1)
    {
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
    }
    if (minute == 2)
    {
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
    }
    if (minute == 3)
    {
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
    }
    if (minute == 4)
    {
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
      delay(600);
      digitalWrite(ledPin8, HIGH);
      delay(1000);
      digitalWrite(ledPin8, LOW);
    }
  }
}
```

```
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
}
if (minute == 5)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
}
if (minute == 6)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
}
```



```
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
}
if (minute == 8)
{
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
}
if (minute == 9)
{
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
```



```
}
if (minute == 2)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
}
if (minute == 3)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
}
if (minute == 4)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
}
}
```

```
    if (minute == 5)
    {
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    }
    if (minute == 6)
    {
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    }
```

```
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);

}
if (minute == 7)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
    digitalWrite(ledPin8, HIGH);
    delay(1000);
    digitalWrite(ledPin8, LOW);
    delay(600);
}
if (minute == 8)
{
digitalWrite(ledPin8, HIGH);
delay(1000);
digitalWrite(ledPin8, LOW);
```


