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#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>

#define OLED_RESET 13
Adafruit_SSD1306 display(OLED_RESET);

#define DS1307_ADDRESS 0x68
byte zero = 0x00;

#if (SSD1306_LCDHEIGHT != 64)
#error("Height incorrect, please fix Adafruit_SSD1306.h!");
#endif

void setup()   {
  Wire.begin();

  //Power Up RTC Clock Module
  pinMode(A3,OUTPUT);
  pinMode(A2,OUTPUT);
  digitalWrite(A3,LOW);
  digitalWrite(A2,HIGH);

  //Power Up OLED Display
  pinMode(12,OUTPUT);
  pinMode(11,OUTPUT);
  digitalWrite(12,LOW);
  digitalWrite(11,HIGH);

  // by default, we'll generate the high voltage from the 3.3v line internally! (neat!)
  display.begin(SSD1306_SWITCHCAPVCC, 0x3D);  // initialize with the I2C addr 0x3D (for the 128x64)

  display.clearDisplay();   // clears the screen and buffer
  display.setTextSize(1);
  display.setTextColor(WHITE);
}


void loop() {
  printDate();
  delay(100);
}

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

String dayOfWeek(int dayWord) {
  switch(dayWord) {
    case 1:
      return "Monday";
      break;
    case 2:
      return "Tuesday";
      break;
    case 3:
      return "Wednesday";
      break;
    case 4:
      return "Thursday";
      break;
    case 5:
      return "Friday";
      break;
```

```
    case 6:
      return "Saturday";
      break;
    case 7:
      return "Sunday";
      break;
    default:
      break;
  }
}

void printDate(){
  // Reset the register pointer
  Wire.beginTransmission(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());

  //Show Time, Date, and Information
  display.clearDisplay();
  display.setTextSize(1);
  display.setCursor(16,0);
  display.print("Alberto Tam Yong");
  display.setTextSize(4);
  display.setCursor(4,16);
  display.print(hour);
  display.print(":");
  display.print(minute);
  display.setTextSize(1);
  display.setCursor(116,54);
  display.print(second);
  display.setCursor(0,54);
  display.setTextSize(1);
  display.print(dayOfWeek(weekDay));
  display.print(", ");
  display.print(month);
  display.print("/");
  display.print(monthDay);
  display.print("/");
  display.print(year);
  display.display();
}
```