

I2C Interface

Source Code for 'Master Reader Arduino Demo (from Arduino)'

```
#include <Wire.h>

void setup() {
  Wire.begin();      // join i2c bus (address optional for master)
  Serial.begin(9600); // start serial for output
}

void loop() {
  Wire.requestFrom(8, 6); // request 6 bytes from slave device #8

  while (Wire.available()) { // slave may send less than requested
    char c = Wire.read(); // receive a byte as character
    Serial.println(c);    // print the character
  }

  delay(500);
}
```

Programming

Source Code for 'Slave Sender Arduino Demo (from Arduino)'

```
#include <Wire.h>

void setup() {
  Wire.begin(8);           // join i2c bus with address #8
  Wire.onRequest(requestEvent); // register event
}

void loop() {
  delay(100);
}

// function that executes whenever data is requested by master
// this function is registered as an event, see setup()
void requestEvent() {

  Wire.write("hello "); // respond with message of 6 bytes
  // as expected by master
}
```

Programming

Source Code for 'RTC Module (from Adafruit)'

```
// Date and time functions using a DS3231 RTC connected via I2C and Wire lib
#include <Wire.h>
#include "RTClib.h"

RTC_DS3231 rtc;

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

void setup () {

#ifdef ESP8266
  while (!Serial); // for Leonardo/Micro/Zero
#endif

  Serial.begin(9600);

  delay(3000); // wait for console opening

  if (! rtc.begin()) {
    Serial.println("Couldn't find RTC");
    while (1);
  }

  if (rtc.lostPower()) {
```

Programming

```
Serial.println("RTC lost power, lets set the time!");
// 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(2014, 1, 21, 3, 0, 0));
}
}

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();

  Serial.print(" since midnight 1/1/1970 = ");
  Serial.print(now.unixtime());
```

Programming

```
Serial.print("s = ");
Serial.print(now.unixtime() / 86400L);
Serial.println("d");

// calculate a date which is 7 days and 30 seconds into the future
DateTime future (now + TimeSpan(7,12,30,6));

Serial.print(" now + 7d + 30s: ");
Serial.print(future.year(), DEC);
Serial.print('/');
Serial.print(future.month(), DEC);
Serial.print('/');
Serial.print(future.day(), DEC);
Serial.print(' ');
Serial.print(future.hour(), DEC);
Serial.print(':');
Serial.print(future.minute(), DEC);
Serial.print(':');
Serial.print(future.second(), DEC);
Serial.println();

Serial.println();
delay(3000);
}
```