



The Canadian Satellite Design Challenge Management Society presents...

The CanSat Kit

for

DUMMIES

Future Space Scientists & Engineers!

Episode #4: Saving to the SD Card

What we're going to do:

- Learn how to write messages out to the Serial Monitor (i.e., the computer screen)
- Hook up the micro-SD card module to the Arduino
- Write a program to save a test file to the SD-card

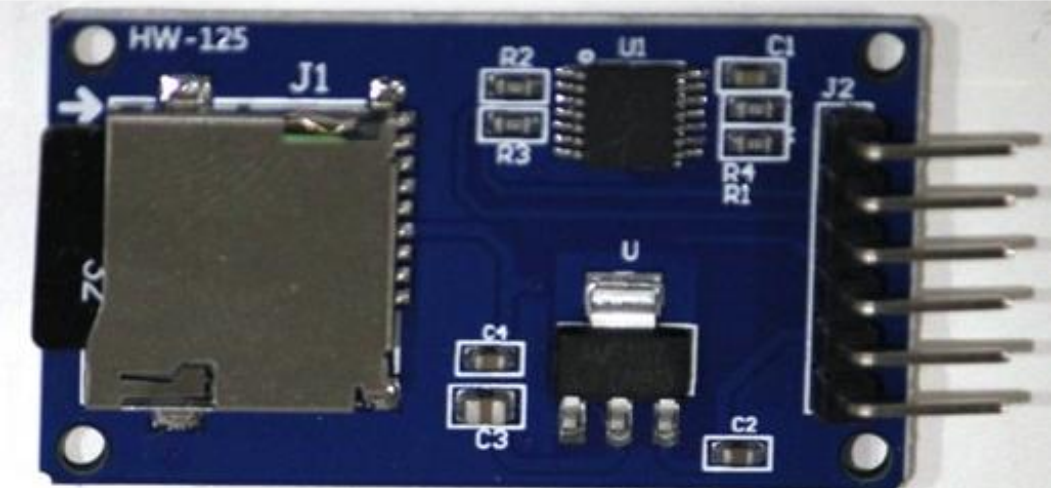
- This tutorial is based on:

<https://create.arduino.cc/projecthub/electropeak/sd-card-module-with-arduino-how-to-read-write-data-37f390>

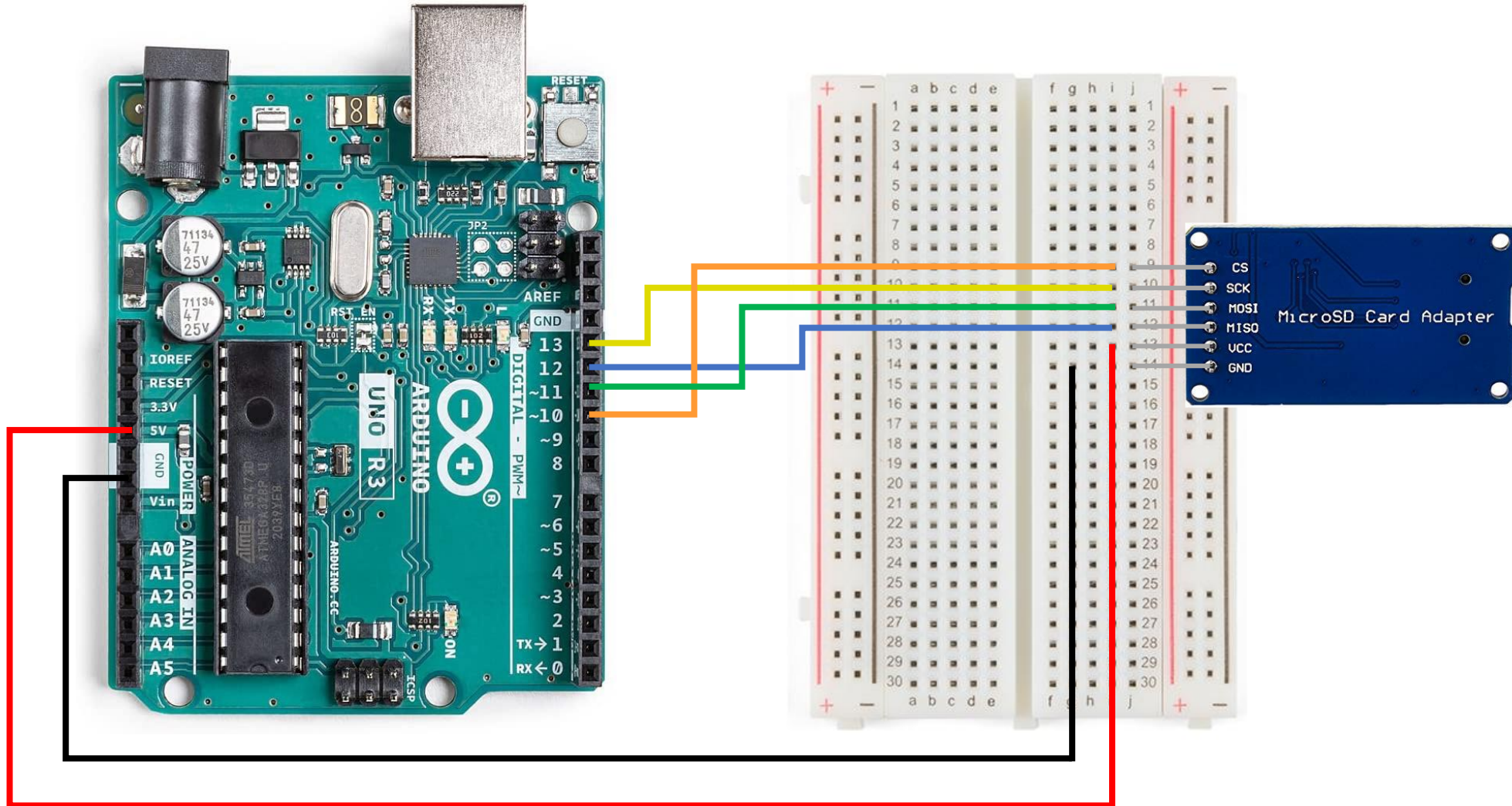
Simple Print Program

```
// *****  
// Simple example to write some data to the Serial Monitor.  
// *****  
#include <SPI.h>  
  
// *****  
//                               S E T U P  
// *****  
void setup() {  
  // Open serial communications and wait for port to open:  
  Serial.begin(115200);  
  while (!Serial) {  
    delay(100);    // wait for serial port to connect  
  }  
  
  Serial.println("Setup completed!");  
}  
  
// *****  
//                               L O O P  
// *****  
void loop() {  
  Serial.println("In the loop");  
  delay(1000);  
}
```

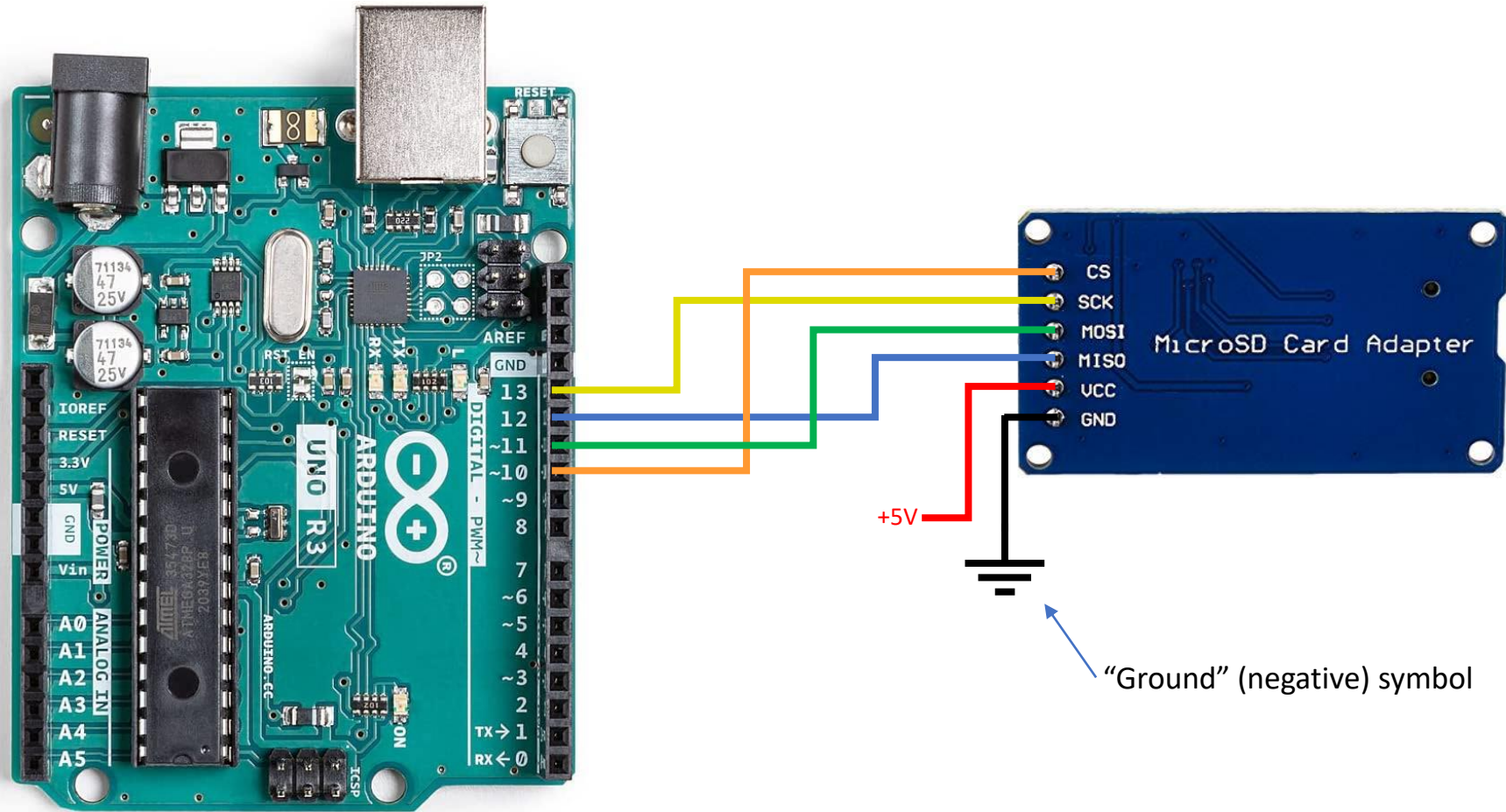
The Micro-SD Card Adaptor



SD-Card Module Circuit Diagram



or simply...



Write to SD Card: Code from the web page

Although it works, it isn't formatted, so it isn't easy to read or figure out.

```
#include <SPI.h>
#include <SD.h>
File myFile;
void setup() {
  // Open serial communications and wait for port to open:
  Serial.begin(9600);
  while (!Serial) {
    ; // wait for serial port to connect. Needed for native USB port only
  }
  Serial.print("Initializing SD card...");
  if (!SD.begin(10)) {
    Serial.println("initialization failed!");
    while (1);
  }
  Serial.println("initialization done.");
  // open the file. note that only one file can be open at a time,
  // so you have to close this one before opening another.
  myFile = SD.open("test.txt", FILE_WRITE);
  // if the file opened okay, write to it:
  if (myFile) {
    Serial.print("Writing to test.txt...");
    myFile.println("This is a test file :)");
    myFile.println("testing 1, 2, 3.");
    for (int i = 0; i < 20; i++) {
      myFile.println(i);
    }
    // close the file:
    myFile.close();
    Serial.println("done.");
  } else {
    // if the file didn't open, print an error:
    Serial.println("error opening test.txt");
  }
}
void loop() {
  // nothing happens after setup
}
```

Code – formatted!

Code should include plenty of comments and blank lines.

```
// *****  
//                               Micro-SD Card Test Program  
//                               *****  
// *****  
#include <SPI.h>  
#include <SD.h>  
  
File myFile;  
  
// *****  
//                               S E T U P  
//                               *****  
// *****  
void setup() {  
    // Open serial communications and wait for port to open:  
    Serial.begin(9600);  
    while (!Serial) {  
        ; // wait for serial port to connect. Needed for native USB port only  
    }  
  
    Serial.print("Initializing SD card... ");  
    if (!SD.begin(10)) {  
        Serial.println("initialization failed!");  
        while (1);  
    }  
  
    Serial.println("initialization done.");  
  
    // open the file. note that only one file can be open at a time,  
    // so you have to close this one before opening another.  
    myFile = SD.open("MyFile.txt", FILE_WRITE);  
  
    // if the file opened okay, write to it:  
    if (myFile) {  
        Serial.print("Writing to MyFile.txt...");  
        myFile.println("This is a test file :)");  
        myFile.println("testing 1, 2, 3.");  
  
        for (int i = 0; i < 20; i++) {  
            myFile.println(i);  
        }  
  
        // close the file:  
        myFile.close();  
  
        Serial.println("done.");  
    }  
    else {  
        // if the file didn't open, print an error:  
        Serial.println("error opening MyFile.txt");  
    }  
}  
  
// *****  
//                               L O O P  
//                               *****  
// *****  
void loop() {  
    // nothing happens after setup  
}
```