

## Getting Started with the amomii SD

The amomii SD is a versatile and compact microSD card reader designed to help you store and use huge amounts of data with ease. The amomii SD is compatible with any microcontroller, but really shines when set to UNO mode and used with the amomii UNO or any other board with the Arduino UNO layout.

Follow these steps to make sure everything is working properly before moving on to one of our awesome example projects.

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## STEP 1

### Card Selection and Formatting

This section will guide you on how to properly format your SD card for use with the amomii SD card reader. It is important to note that the module only supports cards with capacities up to 32GB and requires the card to be formatted as FAT16 or FAT32. However, if your SD card is a recent purchase, it may already be formatted correctly. Nonetheless, we have provided instructions on how to format the card on both Mac and Windows computers.

#### *For Windows users:*

- 1 Insert the SD card into your computer's SD card reader.
- 2 Open File Explorer and find the SD card listed as a removable drive.
- 3 Right-click on the SD card and select "Format".
- 4 In the Format window, select "FAT32" as the file system and ensure that the "Quick Format" option is checked.
- 5 Click on "Start" to initiate the formatting process.
- 6 Wait for the process to complete and then safely remove the SD card from your computer.

#### *For Mac users:*

- 1 Insert the SD card into your computer's SD card reader.
- 2 Open the Disk Utility application, which can be found in the Utilities folder within the Applications folder.
- 3 Find the SD card in the left-hand side of the Disk Utility window and select it.
- 4 Click on the "Erase" button and give the SD card a name, if desired.
- 5 Select "MS-DOS (FAT)" as the format and "Master Boot Record" as the scheme.
- 6 Click on the "Erase" button to initiate the formatting process.
- 7 Wait for the process to complete and then safely remove the SD card from your computer.

#### Note

Formatting the SD card will erase all data stored on it, so make sure to backup any important files before proceeding.

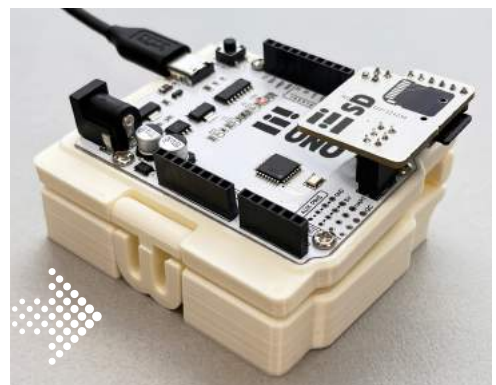
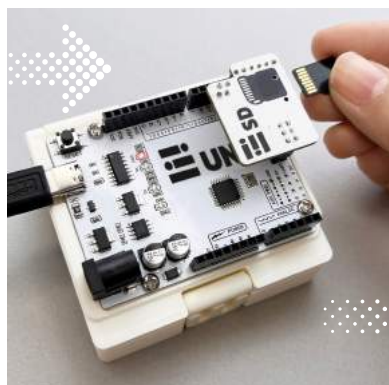
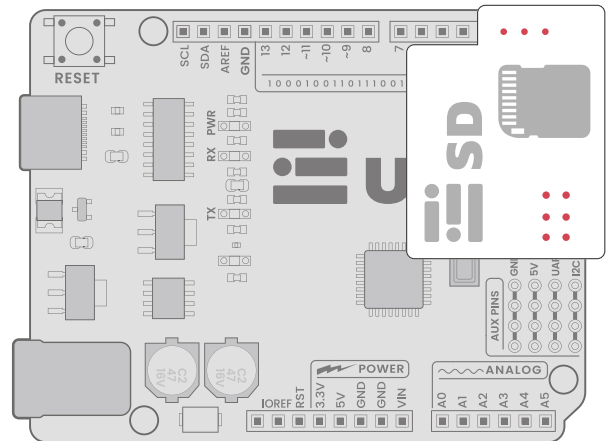
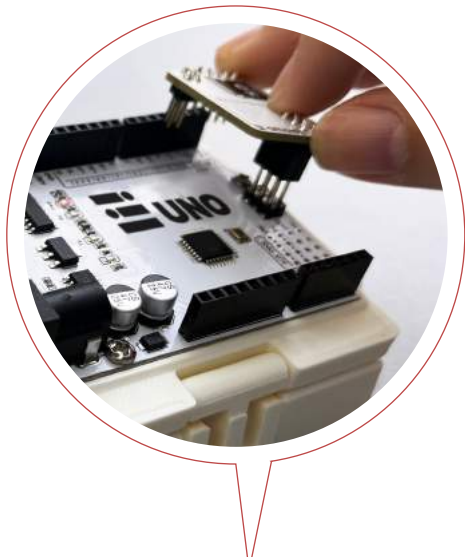
## STEP 2

### Connect the amomii SD

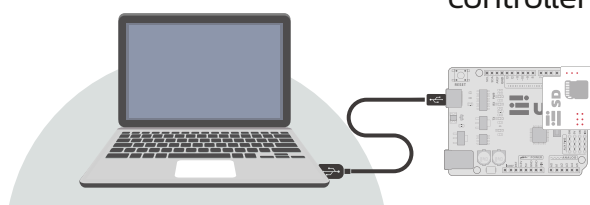
To get started with the amomii SD module, we recommend using it in UNO Mode with the amomii UNO, or any other Arduino UNO configured microcontroller, and that's how we will demonstrate it. However, it works with other microcontrollers when set to Standard Mode.

For more details on the different modes and connections, please refer to the amomii SD Datasheet. [> LINK TO DATASHEET](#)

To connect the module to the amomii UNO, simply attach it to the ICSP pins and digital pins 0-2.



Finally, insert your microSD card and connect your microcontroller to your computer.



### STEP 3

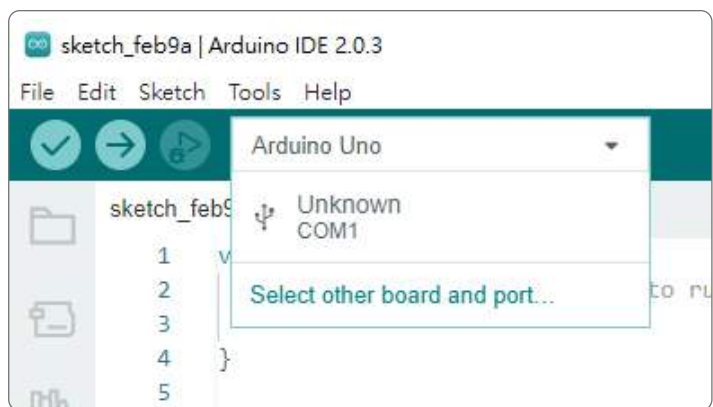
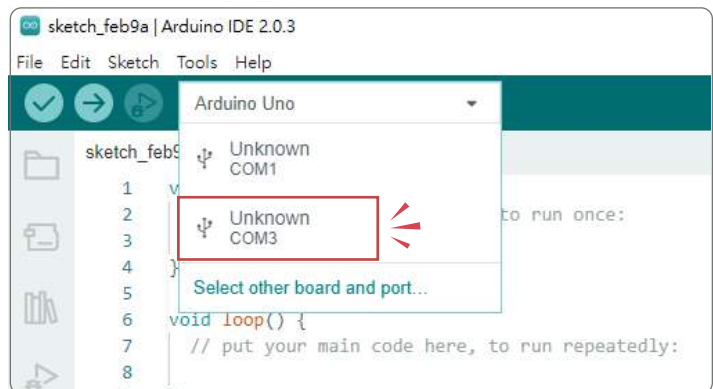
## Select the Correct Board and Port

Before uploading a sketch to your board using the Arduino IDE, you must always make sure you have selected the correct board and port.

To do this, open the IDE, click on the Boards box at the top and select the port your microcontroller is connected to.



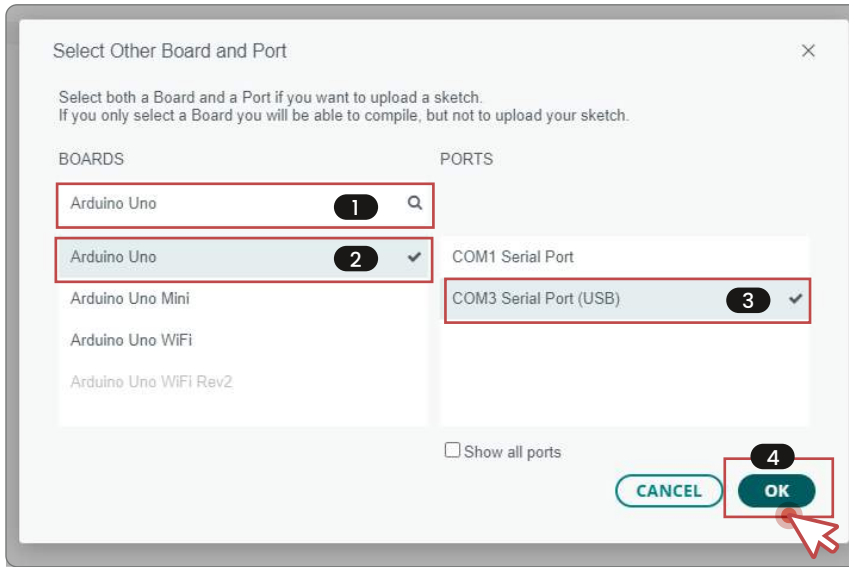
If you are not sure which port is the correct one, with the dropdown menu open, disconnect your microcontroller and note which port disappears.



In my case, **COM3** disappeared, so I know that my board is connected to this port.

Plug your device back into the computer and select the correct port.

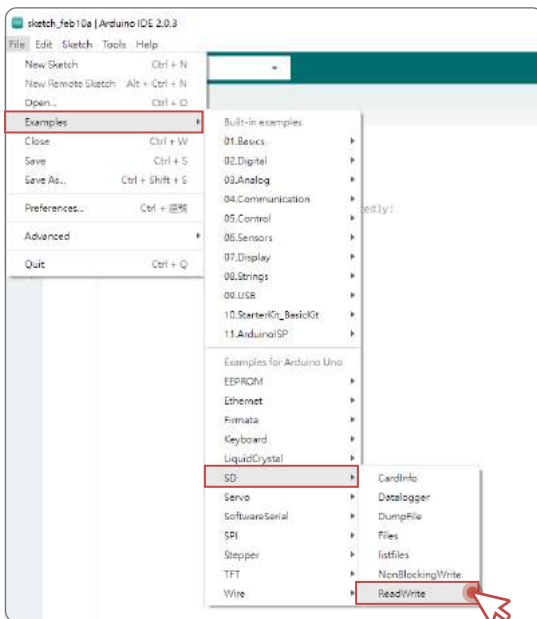
When the Boards and Ports window appears, type “**Arduino UNO**” into the Boards search bar and select the **Arduino UNO**.



## **STEP 4** Upload the Example Sketch

The simplest way to test if the module is working and to learn some basic commands is to use the example sketches that come with the IDE.

To do this, navigate to “**File**” > “**Examples**” > “**SD**” > “**ReadWrite**”.



The **ReadWrite** example sketch creates a txt file called “test.txt”, writes the words “testing 1, 2, 3.” to the file and then displays the words from the file on the Serial Monitor.

To test our module, we will make a few changes:

## 1

Change the "4" to a "2" on line 36. This number indicates the Chip Select Pin (CS), which in the case of the amomii SD in UNO Mode is connected to the UNO's digital pin 2.

```
34 Serial.print("Initializing SD card...");
35
36 if (!SD.begin(2)) {
37     Serial.println("initialization failed!");
38     while (1);
39 }
40 Serial.println("initialization done.");
```



## Note



If you are using the amomii SD in Standard Mode and have wired it as shown in the amomii SD Datasheet, you must change this number to 10 as this is the pin used in the example. Alternatively, you could connect the amomii SD's CS pin to any available digital pin and change the number accordingly; however, the MOSI, MISO, 5V, GND and SCK connections cannot be changed.

## 2

We can change the message to be stored on the SD card. I changed mine to "I love amomii".

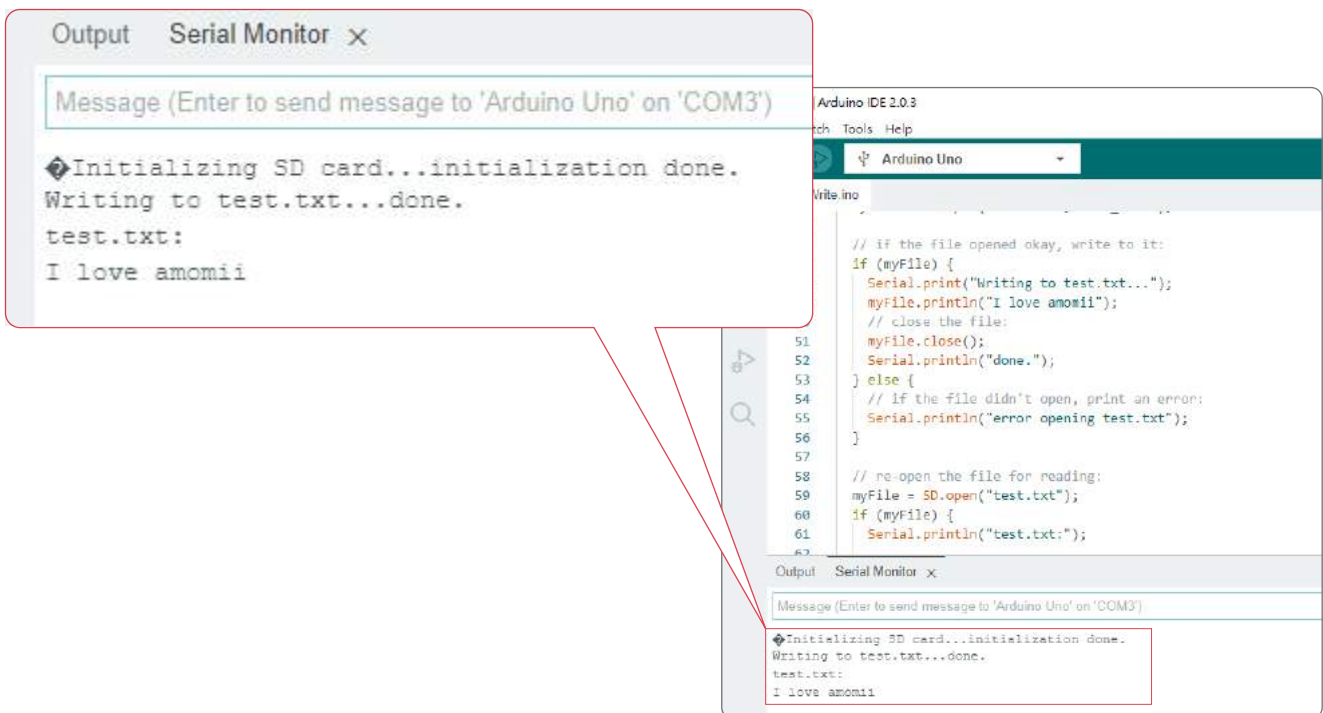
```
46 // if the file opened okay, write to it:
47 if (myFile) {
48     Serial.print("Writing to test.txt...");
49     myFile.println("I love amomii");
50     // close the file:
51     myFile.close();
52     Serial.println("done.");
```

3

Click the Upload icon , and when the upload is complete, open the Serial Monitor by clicking the magnifying glass at the top right corner of the IDE .



If everything is working properly, this message should appear in the Serial Monitor:



### Note

If you receive a message saying the initialization failed, make sure you have changed the CS pin number accordingly (check all connections) and make sure you have used a compatible microSD card. It may be the case that you need to format the SD card even if you think it already has the correct formatting. Refer back to Step 1 for details on how to do this.

## STEP 5 **Open the File on your Computer**

If you successfully completed Step 4, everything is working fine and the test is actually complete. The following few steps are just to reconfirm that everything worked and to demonstrate that you can read information from the card entered from your computer.

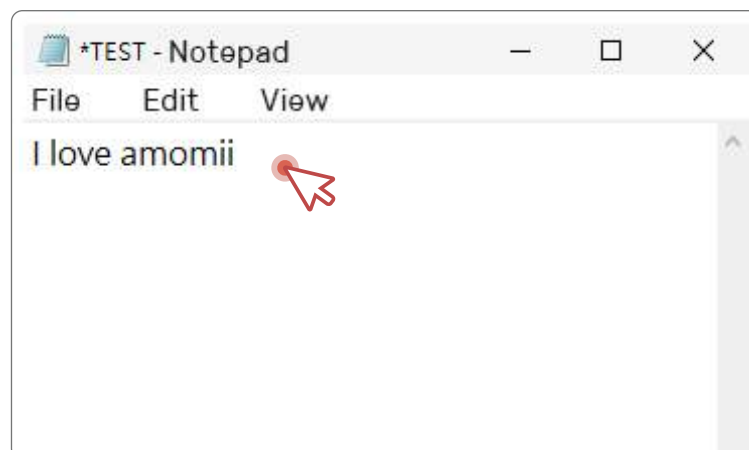
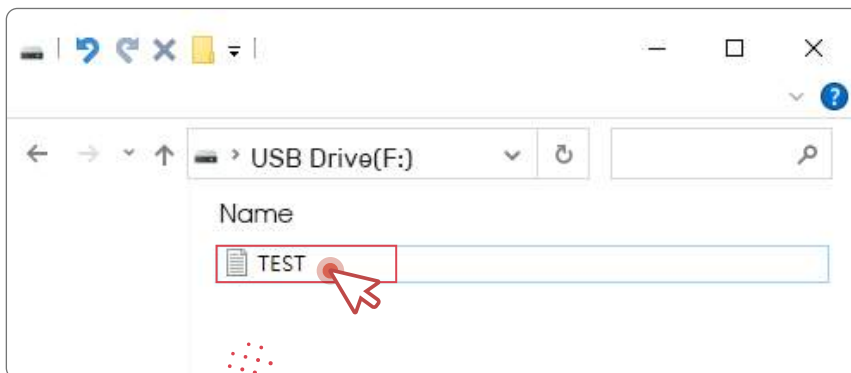
1

Connect the SD card to your computer directly. To do this, you will need some form of SD slot adapter (if your computer doesn't have an SD card slot). I used this USB adapter that I got with my 3D printer.



2

Find the SD card folder on your computer and open it. You should see a txt file called "test". Open that and you'll find your message.



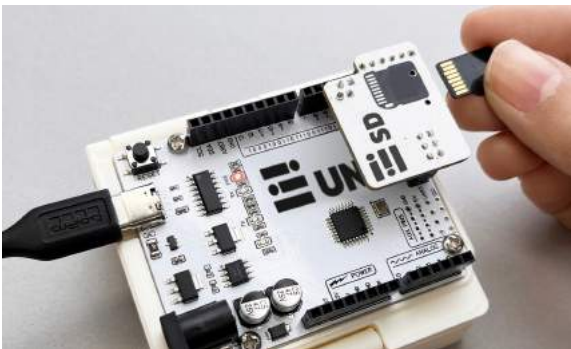
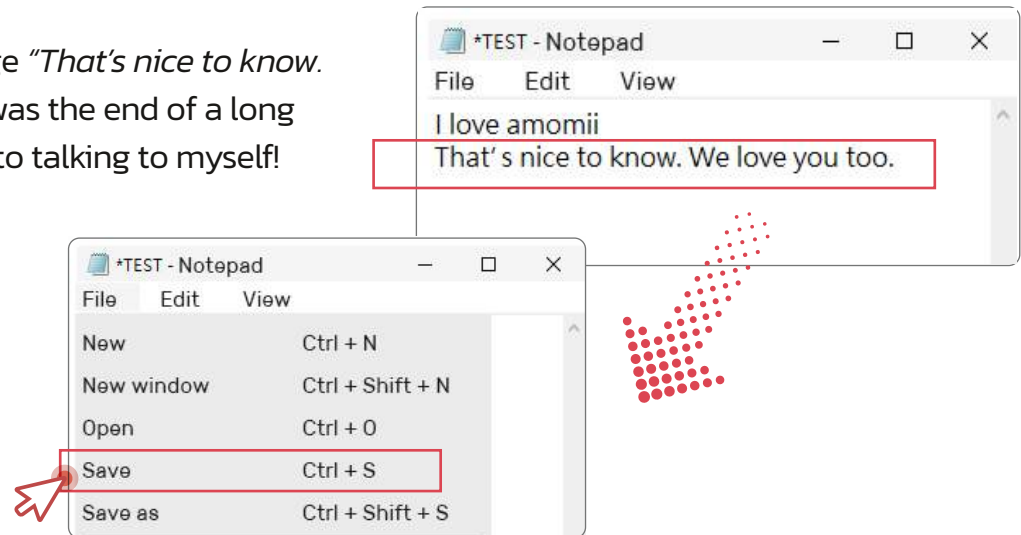


## STEP 6

## Reading Information from the SD Card

Now we can enter more data directly from the text editor and see if we can access it from the microcontroller using the amomii SD module. Type in your message and save it.

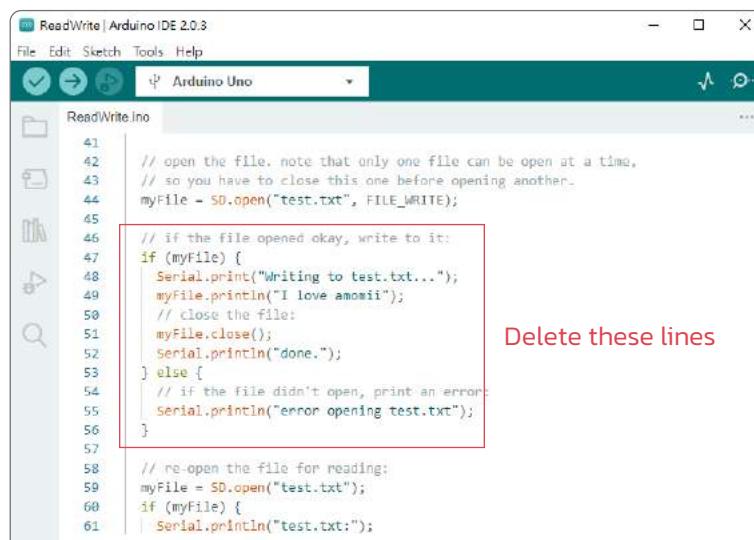
I entered the message "That's nice to know. We love you too." It was the end of a long day and I'd reverted to talking to myself!



Next, reinsert the microSD card into the amomii SD module and reconnect your microcontroller to your computer.

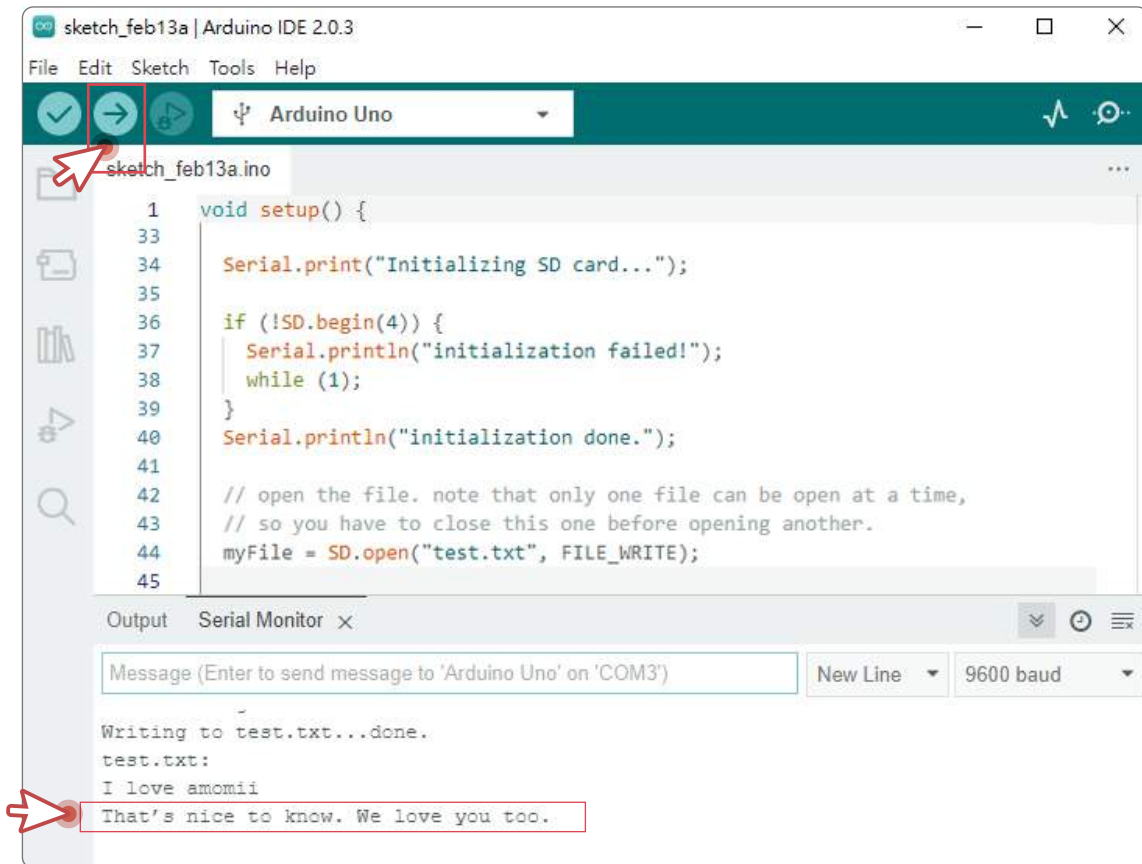
We now want to use the code to read the information from the card only, not write to it.

To do this, you can simply delete the section of code from the ReadWrite example from before used for writing to the card.



```
41
42 // open the file. note that only one file can be open at a time,
43 // so you have to close this one before opening another.
44 myFile = SD.open("test.txt", FILE_WRITE);
45
46 // if the file opened okay, write to it:
47 if (myFile) {
48   Serial.print("Writing to test.txt...");
49   myFile.println("I love amomii");
50   // close the file:
51   myFile.close();
52   Serial.println("done.");
53 } else {
54   // if the file didn't open, print an error:
55   Serial.println("error opening test.txt");
56 }
57
58 // re-open the file for reading:
59 myFile = SD.open("test.txt");
60 if (myFile) {
61   Serial.println("test.txt:");
```

Now when you **upload** the code to your board and open the Serial Monitor, you should see the message that you saved to the SD card from the text editor. Done!



## STEP 7 Example Projects

Now that you know everything is working nicely, it's time to be creative and put your module to good use. A great place to start would be checking out some of our examples in the Projects and Hacks area at [amomii.com](https://amomii.com)



WEBSITE [amomii.com](https://amomii.com)

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