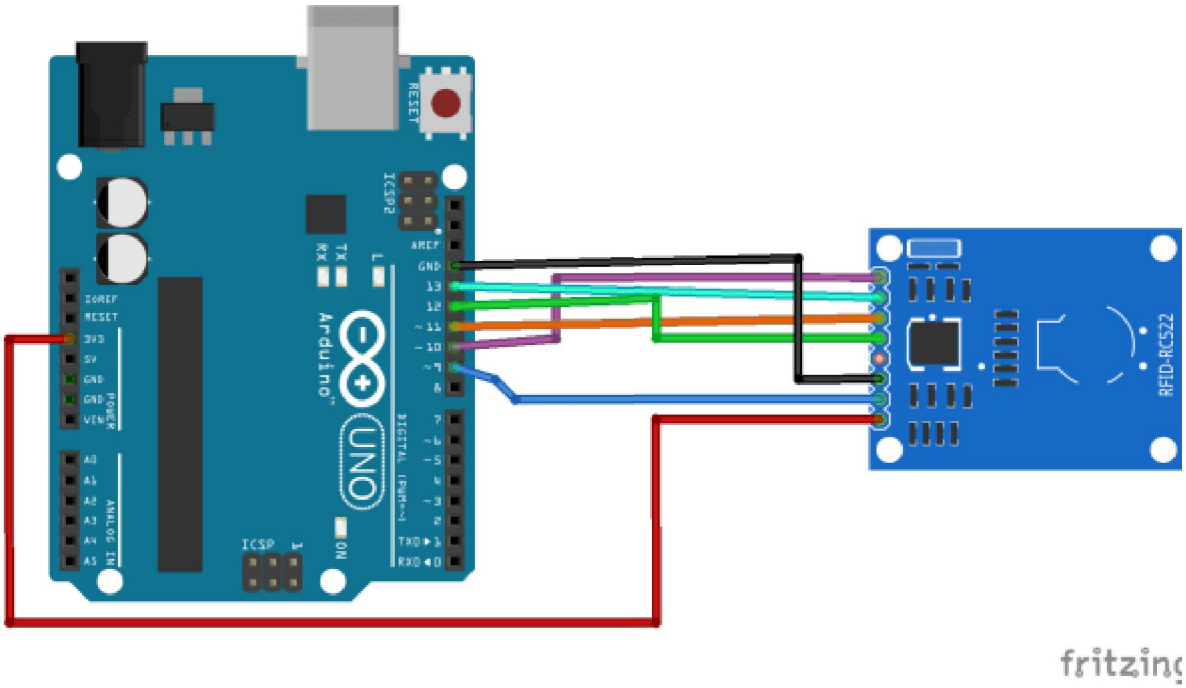
## Pin Wiring

| Pin | Wiring to Arduino Uno |
|---|---|
| SDA | Digital 10 |
| SCK | Digital 13 |
| MOSI | Digital 11 |
| MISO | Digital 12 |
| IRQ | Don't connect |
| GND | GND |
| RST | Digital 9 |
| 3.3V | 3.3V |

## Schematic

Wire the RFID reader to the Arduino as shown in the following schematic diagram:

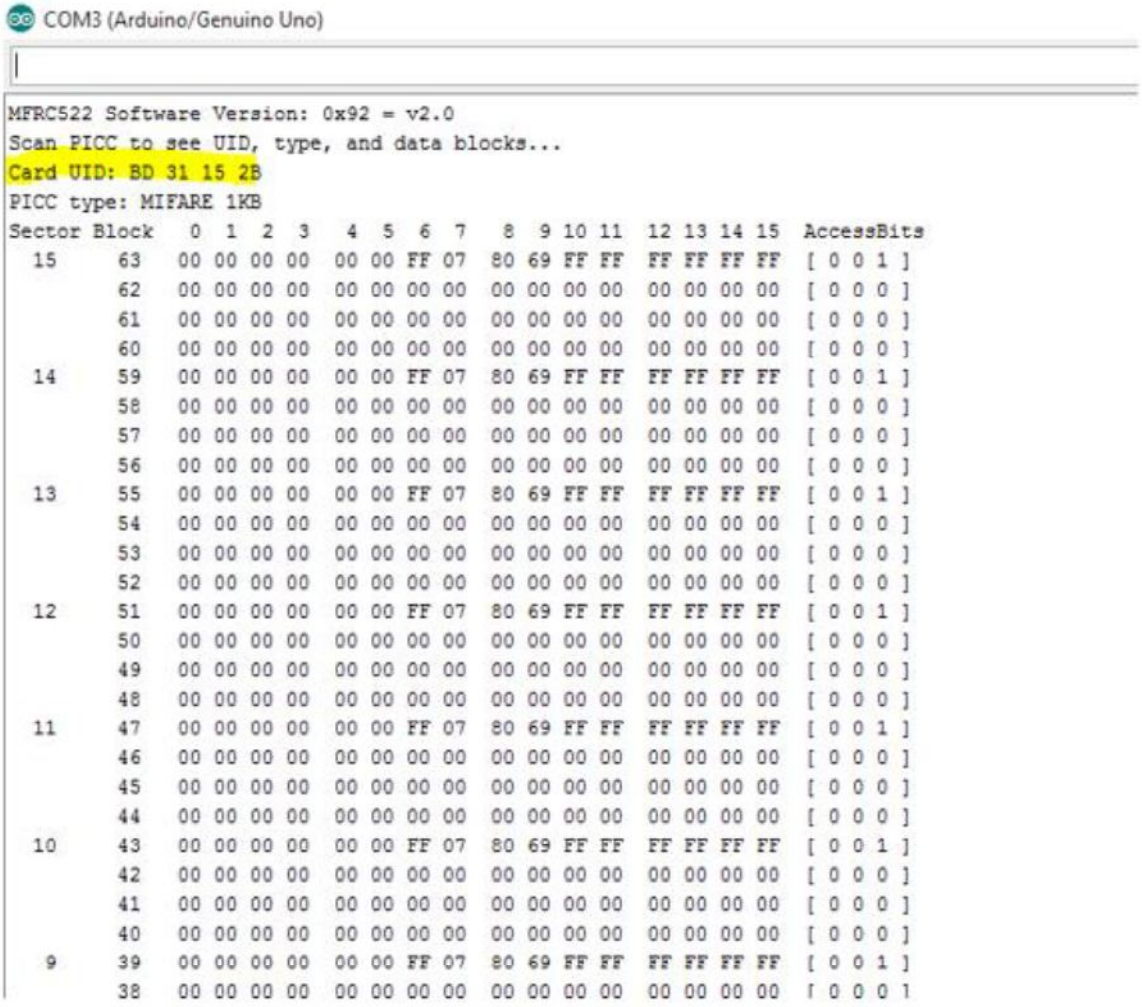


# Reading Data from a RFID Tag

After having the circuit ready, go to **File** ▸ **Examples** ▸ **MFRC522** ▸ **DumpInfo** and upload the code. This code is available in your Arduino IDE after installing the RFID library.

Then, open the Serial Monitor. You should see something like the figure below:


Approximate the RFID card or the keychain to the reader. Let the reader and the tag closer until all the information is displayed.



This is the information that you can read from the card, including the card UID that is highlighted in yellow. The information is stored in the memory that is divided into segments and blocks as you can see in the previous picture.

You have 1024 bytes of data storage divided into 16 sectors. Write down your UID card because you'll need it later.

## Code

Upload the following code to your Arduino board:

View code on GitHub

```
/*
 *
 * All the resources for this project: http://randomnerdtutorials.com/
 * Modified by Rui Santos
 *
 * Created by FILIPEFLOP
 *
 */

#include <SPI.h>
#include <MFRC522.h>

#define SS_PIN 10
#define RST_PIN 9
MFRC522 mfrc522(SS_PIN, RST_PIN);   // Create MFRC522 instance.

void setup()
{
  Serial.begin(9600);   // Initiate a serial communication
  SPI.begin();      // Initiate  SPI bus
  mfrc522.PCD_Init();   // Initiate MFRC522
  Serial.println("Approximate your card to the reader...");
  Serial.println();

}
void loop()
{
  // Look for new cards
  if ( ! mfrc522.PICC_IsNewCardPresent())
  {
```

```
    return;
  }
  // Select one of the cards
  if ( ! mfrc522.PICC ReadCardSerial())
  {
    return;
  }
  //Show UID on serial monitor
  Serial.print("UID tag :");
  String content= "";
  byte letter;
  for (byte i = 0; i < mfrc522.uid.size; i++)
  {
     Serial.print(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " ");
     Serial.print(mfrc522.uid.uidByte[i], HEX);
     content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));
     content.concat(String(mfrc522.uid.uidByte[i], HEX));
  }
  Serial.println();
  Serial.print("Message : ");
  content.toUpperCase();
  if (content.substring(1) == "BD 31 15 2B") //change here the UID of the
card/cards that you want to give access
  {
    Serial.println("Authorized access");
    Serial.println();
    delay(3000);
  }

 else   {
    Serial.println(" Access denied");
    delay(3000);
  }
}
```

In code you need to change the following line with the UID card you've found previously.

```
if (content.substring(1) == "REPLACE WITH YOUR UID")
```