



RFID Reader



01 RFID READER MATERIAL NEEDED

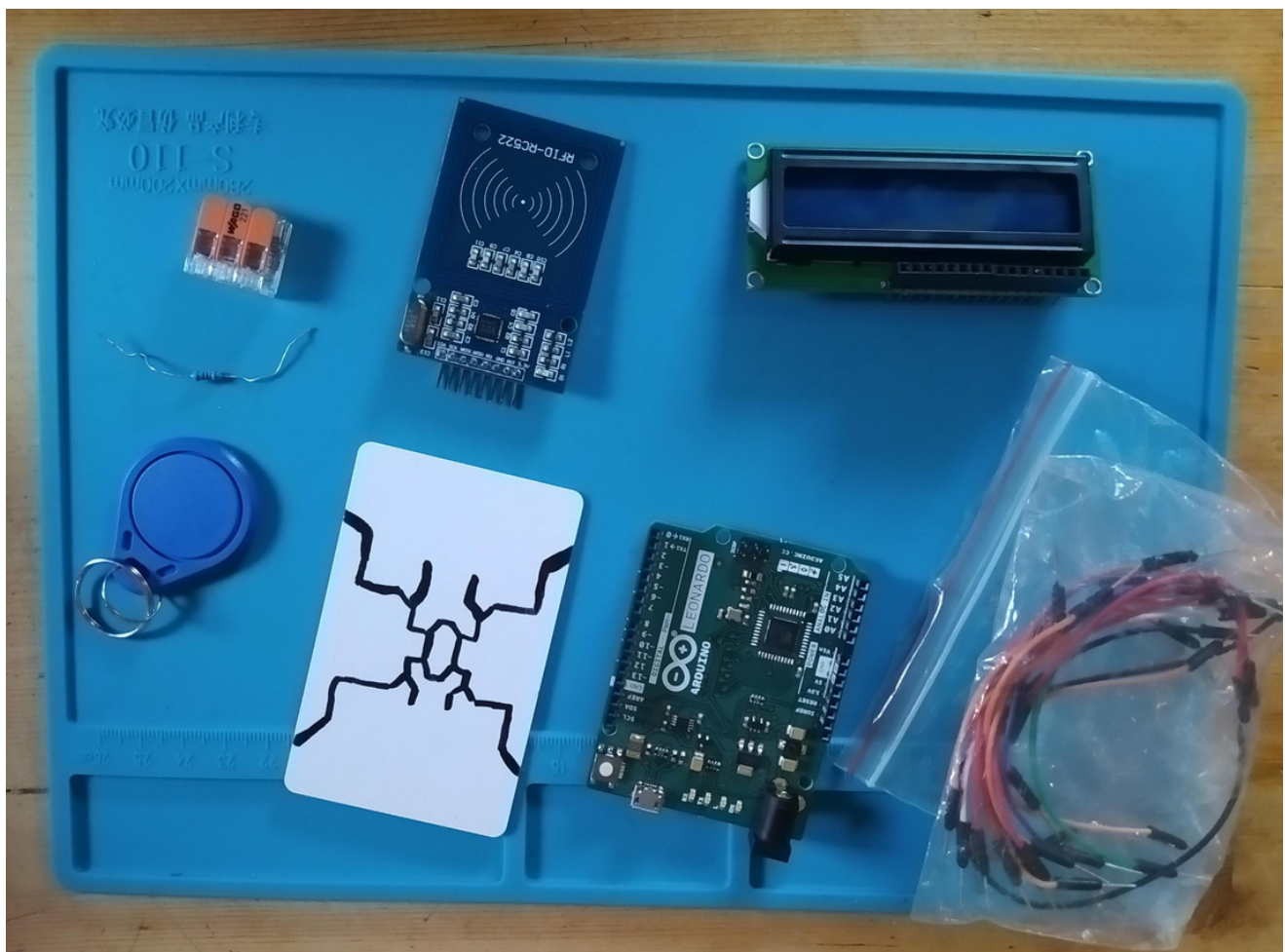


- Arduino Leonardo
- RFID Reader RC522
- LCD Screen Two lines
- A lot of wires
- 3D printed stand
- A glue gun or small screw to fix the components
- A 1K resistor
- Breadboard, domino or soldering iron to connect a few jumpers wires together

The stand's STL files is available here : [Download](#)

The Arduino file is available here : [Download](#)

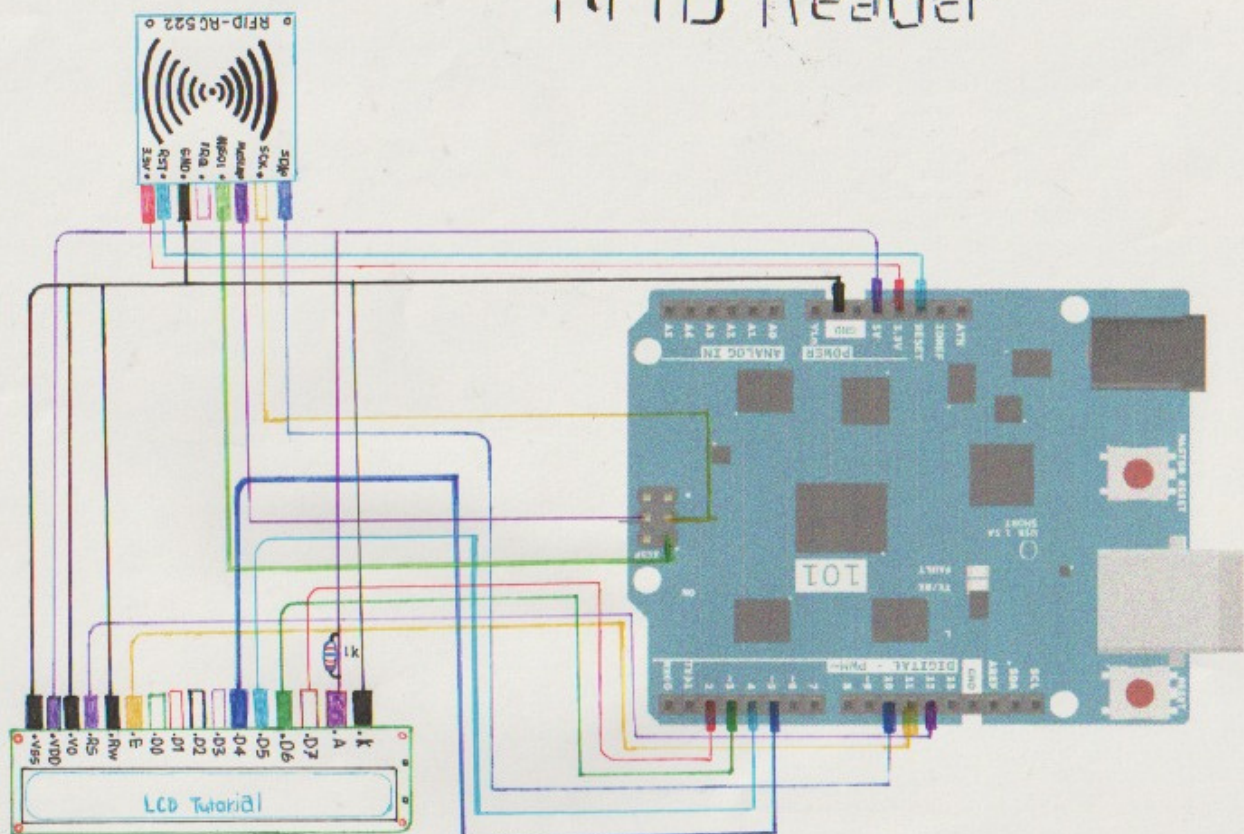
If you have gathered everything you can jump to Step 2.



02 RFID READER WIRING



Follow this scheme to make your prototype with a breadboard first.



03 RFID READER UPLOADING THE CODE



Before uploading any code, make sure to install the libraries of MFRC522 and LiquidCrystal. You can find them in Arduino IDE > Sketch > Include Library > Manage Libraries. Then search for them and click install for both of them.

Now you can upload the code downloaded earlier to your Arduino Board and try out your prototype. If the wiring is good the LCD should turn on and display "Waiting for RFID tags...". You can try to pass a tag in front of the reader and its ID should be displayed on the screen.

There is nothing to be changed except for the message displayed on the screen lines 12, 14 and 30. The `setCursor()` function is used to say which line we want to write and the `clear()` function is used to clear the screen from any characters.

```
rfid_reader_final
1 #include <SPI.h>
2 #include <MFRC522.h>
3 #include <LiquidCrystal.h> |
4 LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
5 MFRC522 rfid (10, 9);
6 String tagId;
7
8 void setup() {
9   SPI.begin();
10  rfid.PCD_Init();
11  lcd.begin(16, 2);
12  lcd.print("Waiting for RFID");
13  lcd.setCursor(0, 1);
14  lcd.print("tags...");
15 }
16
17 void tagIdFinder(byte *buffer, byte bufferSize) {
18   tagId="";
19   for(byte i = 0; i < bufferSize; i++) {
20     tagId += String(buffer[i], HEX);
21   }
22 }
23
24 void loop() {
25   if(rfid.PICC_IsNewCardPresent()) {
26     if(rfid.PICC_ReadCardSerial()) {
27       tagIdFinder(rfid.uid.uidByte, rfid.uid.size);
28       lcd.clear();
29       lcd.setCursor(0, 0);
30       lcd.print("Tag detected:");
31       lcd.setCursor(0, 1);
32       lcd.print(tagId);
33     }
34   }
35 }
```

Done Saving.

04 RFID READER MAKING THE STAND



You're ready to assemble your box and finish with the prototype.

The LCD screen should fit in the hole. The RFID module should go on the left side either facing up or down. Lastly, the Arduino board should be behind.

You can glue or screw them to the holder. Put back all the wires and try it out.

Your RFID reader is ready!

