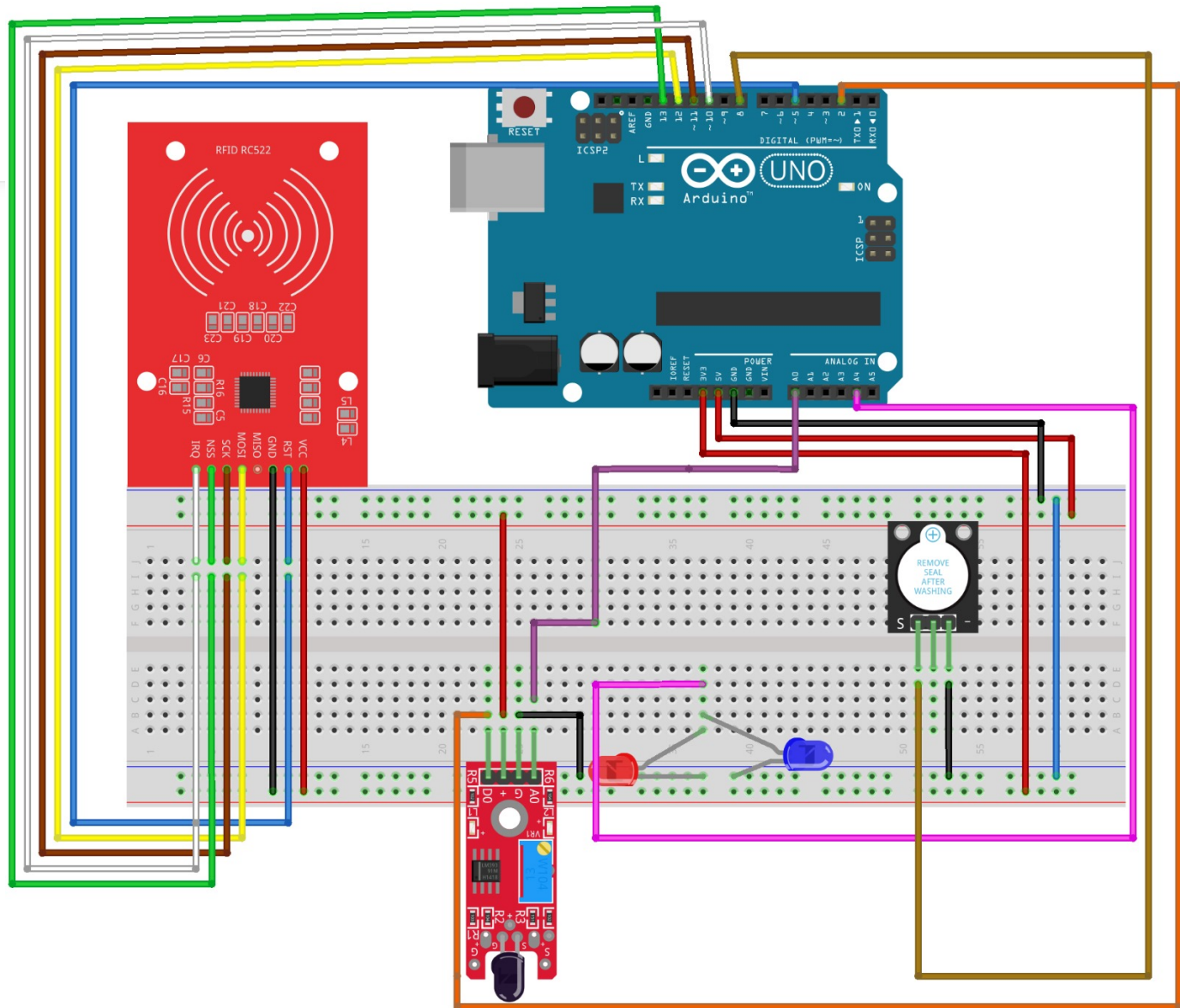# PROGETTO ARDUINO: RILEVATORE DI FUOCO CON ALLARME E MODULO RFID

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DISEGNO FRITZING

Componenti utilizzati

- Jumpers
- Modulo rfid
- Modulo rilevatore di fuoco
- Arduino uno
- Modulo buzzer
- Led

CODICE PER ARDUINO IDE

```arduino
1   #include <SPI.h>
2   #include <MFRC522.h>
3
4   #define SS_PIN 10
5   #define RST_PIN 9
6
7   MFRC522 mfrc522(SS_PIN, RST_PIN);   // Creazione dell'oggetto MFRC522
8
9   int buzzerPin = 8;
10  int blue = A4;
11  int red = A5;
12  int t = 60;
13  #define DO_PIN 2 // Arduino's pin connected to DO pin of the flame sensor
14
15  void setup() {
16    Serial.begin(9600);
17    pinMode(2, OUTPUT);
18    pinMode(A5, OUTPUT);
19    pinMode(A4, OUTPUT);
20    pinMode(SS_PIN, OUTPUT);
21    pinMode(RST_PIN, OUTPUT);
22    Serial.begin(9600);
23    // initialize the Arduino's pin as an input
24    pinMode(DO_PIN, INPUT);
25    pinMode (buzzerPin, OUTPUT);
26    SPI.begin();        // Inizializzazione SPI bus
27    mfrc522.PCD_Init(); // Inizializzazione della libreria MFRC522
28  }
29
```

```arduino
30  void loop() {
31    // Cerca nuove card
32    if (mfrc522.PICC_IsNewCardPresent() && mfrc522.PICC_ReadCardSerial()) {
33      // Lettura del UID
34      Serial.print(F("Card UID:"));
35      String content = "";
36      byte letter;
37      for (byte i = 0; i < mfrc522.uid.size; i++) {
38        Serial.print(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " ");
39        Serial.print(mfrc522.uid.uidByte[i], HEX);
40        content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));
41        content.concat(String(mfrc522.uid.uidByte[i], HEX));
42      }
43      Serial.println();
44      Serial.print("Message : ");
45      content.toUpperCase();
46      // Verifica se la card è autorizzata
47      if (content.substring(1) == "03 87 BA 34") { // Modificare questo UID con quello del
48        Serial.println("Accesso consentito");
49        // Esegui il codice quando l'accesso è consentito
50        int flame_state = digitalRead(DO_PIN);
51        if (flame_state == HIGH) {
52          Serial.println("The flame is present => The fire is detected");
53          policeSirenLights();
54          digitalWrite(buzzerPin, HIGH);
55          delay(10);
56          digitalWrite(buzzerPin, HIGH);
57          delay(100);
58        } else {
59          Serial.println("The flame is NOT present => The fire is NOT detected");
60        }
61      } else {
62        Serial.println("Accesso non consentito");
63      }
64      delay(1000); // Ritardo prima di cercare una nuova card
65    }
66  }
67
68  void policeSirenLights() {
```

CODICE PER ARDUINO IDE

```
69      digitalWrite(A4, HIGH);
70      delay(t);
71      digitalWrite(A4, LOW);
72      delay(t);
73
74      digitalWrite(A4, HIGH);
75      delay(t);
76      digitalWrite(A4, LOW);
77      delay(t);
78
79      digitalWrite(A4, HIGH);
80      delay(t);
81      digitalWrite(A4, LOW);
82      delay(t);
83
84      digitalWrite(A5, HIGH);
85      delay(t);
86      digitalWrite(A5, LOW);
87      delay(t);
88
89      digitalWrite(A5, HIGH);
90      delay(t);
91      digitalWrite(A5, LOW);
92      delay(t);
93
94      digitalWrite(A5, HIGH);
95      delay(t);
96      digitalWrite(A5, LOW);
97      delay(t);
98
99      digitalWrite(A4, HIGH);
100     digitalWrite(A5, HIGH);
101     delay(t);
102     digitalWrite(A4, LOW);
103     digitalWrite(A5, LOW);
104     delay(t);
105
```

```
106     digitalWrite(A4, HIGH);
107     digitalWrite(A5, HIGH);
108     delay(t);
109     digitalWrite(A4, LOW);
110     digitalWrite(A5, LOW);
111     delay(t);
112
113     digitalWrite(A4, HIGH);
114     digitalWrite(A5, HIGH);
115     delay(t);
116     digitalWrite(A4, LOW);
117     digitalWrite(A5, LOW);
118     delay(t);
119
120     digitalWrite(A4, HIGH);
121     digitalWrite(A5, HIGH);
122     delay(t);
123     digitalWrite(A4, LOW);
124     digitalWrite(A5, LOW);
125     delay(t);
126   }
127
```

Link:

- [Video YouTube](#)
- [GitHub repository](#)