# Automatic Door Locking System

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

#define SS_PIN 10
#define RST_PIN 9
#define SERVO_PIN 3

Servo myservo; // Create servo motor object
MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance

#define ACCESS_DELAY 3000 // Delay for gate open time
#define DENIED_DELAY 1000 // Delay for denied access

// the UID of your authorized card
const String AUTHORIZED_UID = "F3 34 BA D9";

void setup() {
  Serial.begin(9600);   // Initialize serial communication
  SPI.begin();          // Initialize SPI bus
  mfrc522.PCD_Init();   // Initialize RFID reader

  myservo.attach(SERVO_PIN); // Attach servo to pin
  myservo.write(0);          // Keep gate closed initially
  Serial.println("Place your card near the reader...");
}

void loop() {
  // Look for new cards
```

```
if (!mfrc522.PICC_IsNewCardPresent()) {
  return;
}

// Select the card
if (!mfrc522.PICC_ReadCardSerial()) {
  return;
}

// Read card UID and convert it to string
String content = "";
for (byte i = 0; i < mfrc522.uid.size; i++) {
  content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));
  content.concat(String(mfrc522.uid.uidByte[i], HEX));
}
content.toUpperCase();

Serial.print("Card UID: ");
Serial.println(content);

// Check if the card is authorized
if (content.substring(1) == AUTHORIZED_UID) {
  Serial.println("Authorized access");
  openGate();
} else {
  Serial.println("Access denied");
  delay(DENIED_DELAY);
}

// Halt communication with the card
mfrc522.PICC_HaltA();
```

```
}

void openGate() {
  myservo.write(55); // Open gate
  delay(ACCESS_DELAY);
  myservo.write(0);  // Close gate
}
```