

# SMART SYSTEM PARKING

## PYTHON SCRIPT:

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2); // Change the HEX address

#include <Servo.h>
Servo myservol;

int IR1 = 2;
int IR2 = 4;
int SmokeDetectorPin = 6; // Digital pin for the smoke detector
int BuzzerPin = 7;        // Digital pin for the buzzer

int Slot = 4; // Enter Total number of parking Slots

bool flag1 = false;
bool flag2 = false;

unsigned long lastLcdUpdate = 0; // Variable to track the time of the
last LCD update
unsigned long lcdUpdateInterval = 1000; // Update the LCD every 1000
milliseconds (1 second)

void setup() {
  lcd.begin(16, 2); // Initialize LCD with 16 columns and 2 rows
  lcd.backlight();
  pinMode(IR1, INPUT);
  pinMode(IR2, INPUT);
  pinMode(SmokeDetectorPin, INPUT);
  pinMode(BuzzerPin, OUTPUT);

  myservol.attach(3);
  myservol.write(100);

  lcd.setCursor(0, 0);
  lcd.print("    ARDUINO    ");
  lcd.setCursor(0, 1);
  lcd.print(" PARKING SYSTEM ");
  delay(2000);
  lcd.clear();
```

```

    Serial.begin(9600); // Start serial communication for debugging
}

void loop() {
    if (digitalRead(IR1) == LOW && !flag1) {
        if (Slot > 0) {
            flag1 = true;
            if (!flag2) {
                myservo1.write(0);
                Slot--;
            }
        } else {
            displayMessage("    SORRY :(    ", "    Parking Full    ");
        }
    }

    if (digitalRead(IR2) == LOW && !flag2) {
        flag2 = true;
        if (!flag1) {
            myservo1.write(0);
            Slot++;
        }
    }

    if (flag1 && flag2) {
        delay(1000);
        myservo1.write(100);
        Serial.println("Servo returned to initial position.");
        flag1 = false;
        flag2 = false;
    }

    // Update the LCD display with a delay
    if (millis() - lastLcdUpdate >= lcdUpdateInterval) {
        updateLcdDisplay();
        lastLcdUpdate = millis();
    }

    // ... (Rest of your code)
}

void updateLcdDisplay() {

```

```
if (digitalRead(SmokeDetectorPin) == HIGH) {
    displayMessage("    WARNING!    ", " Smoke Detected ");
    digitalWrite(BuzzerPin, HIGH); // Turn on the buzzer
} else {
    displayMessage("    WELCOME!    ", "Slot Left: " + String(Slot));
    digitalWrite(BuzzerPin, LOW); // Turn off the buzzer
}
}

void displayMessage(const char *line1, const String &line2) {
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print(line1);
    lcd.setCursor(0, 1);
    lcd.print(line2);
}
```