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 myservo1;

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);

  myservo1.attach(3);
  myservo1.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);
}
```