Digital Parking System

This Arduino-based **Digital Parking System** simulates a basic model to manage parking slot availability using **infrared (IR) sensors** and a **servo motor-controlled gate**. The system is designed to monitor and control the entry and exit of vehicles in a parking area with **limited slots**.

Hardware Components Used:

- **Arduino Uno**
- **2 IR sensors** (for detecting vehicle entry and exit)
- **1 Servo Motor** (for gate control)
- **Serial Monitor** (for displaying system messages)
- **Power Supply**

Working Principle:

- The parking lot starts with a fixed number of **available slots** (Slot = 4).
- **IR1** detects an incoming vehicle. If a slot is available, the servo motor rotates (0°) to open the gate and lets the vehicle in. The slot count decreases by 1.
- If the parking is full, the system displays a "SORRY :(Parking Full" message and denies access.
- **IR2** detects an outgoing vehicle. Upon exit, the servo motor also opens the gate and the slot count increases by 1.
- Once both entry and exit processes complete (i.e., both IR sensors are triggered), the gate resets (servo returns to 100°), and flags are cleared for the next operation.

Output Display (via Serial Monitor):

- Displays welcome message and remaining slots.
- Displays a warning when no slots are available

Features:

- Real-time slot management.
- Automatic gate control based on sensor input.
- Feedback through the serial monitor for monitoring.