

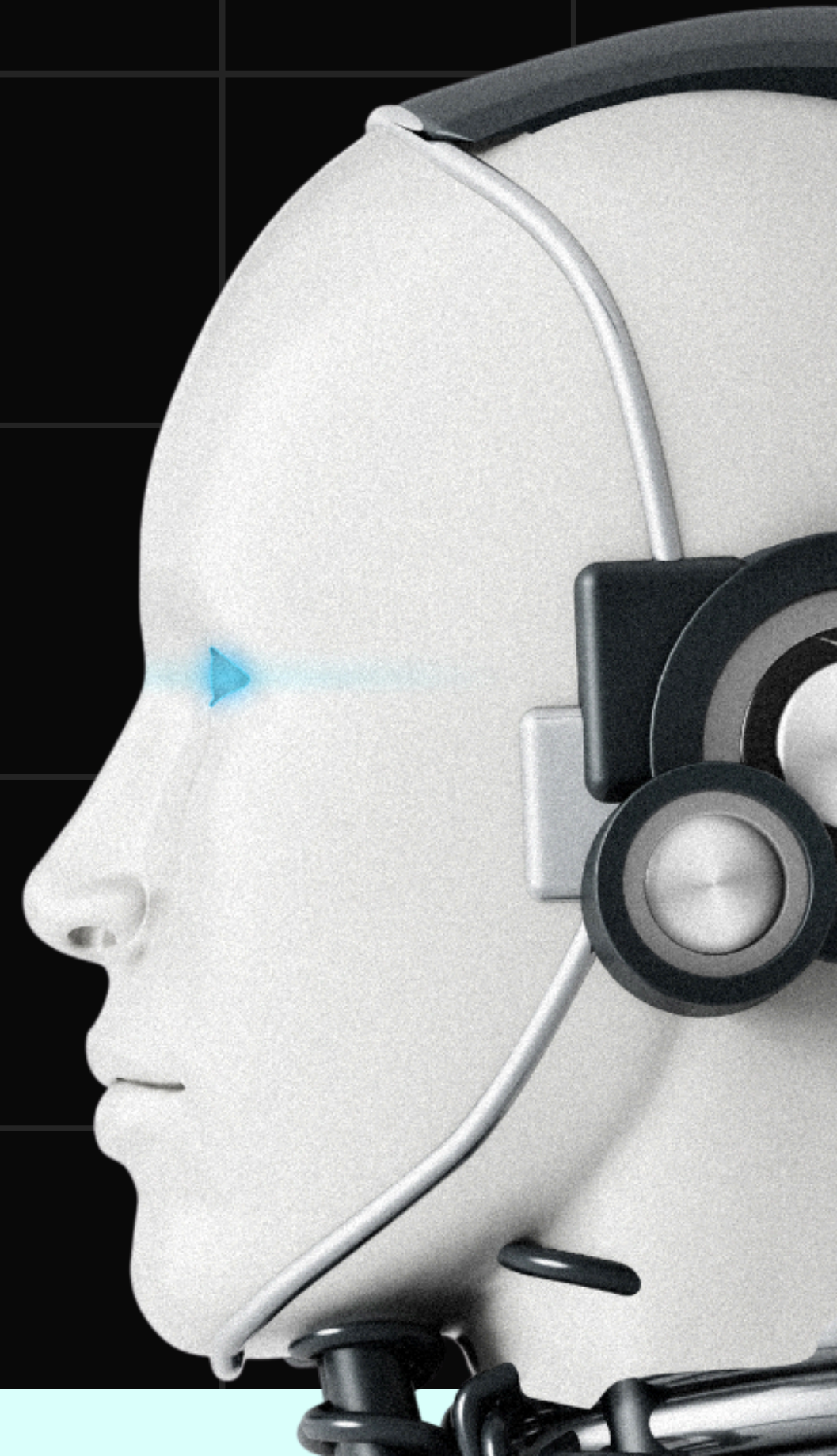
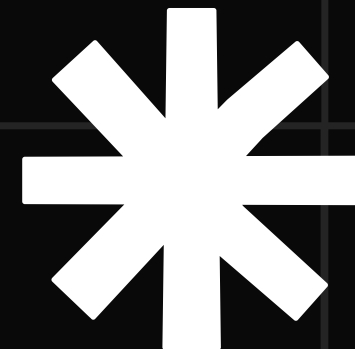
# Smart Parking System

Presented by Group 6



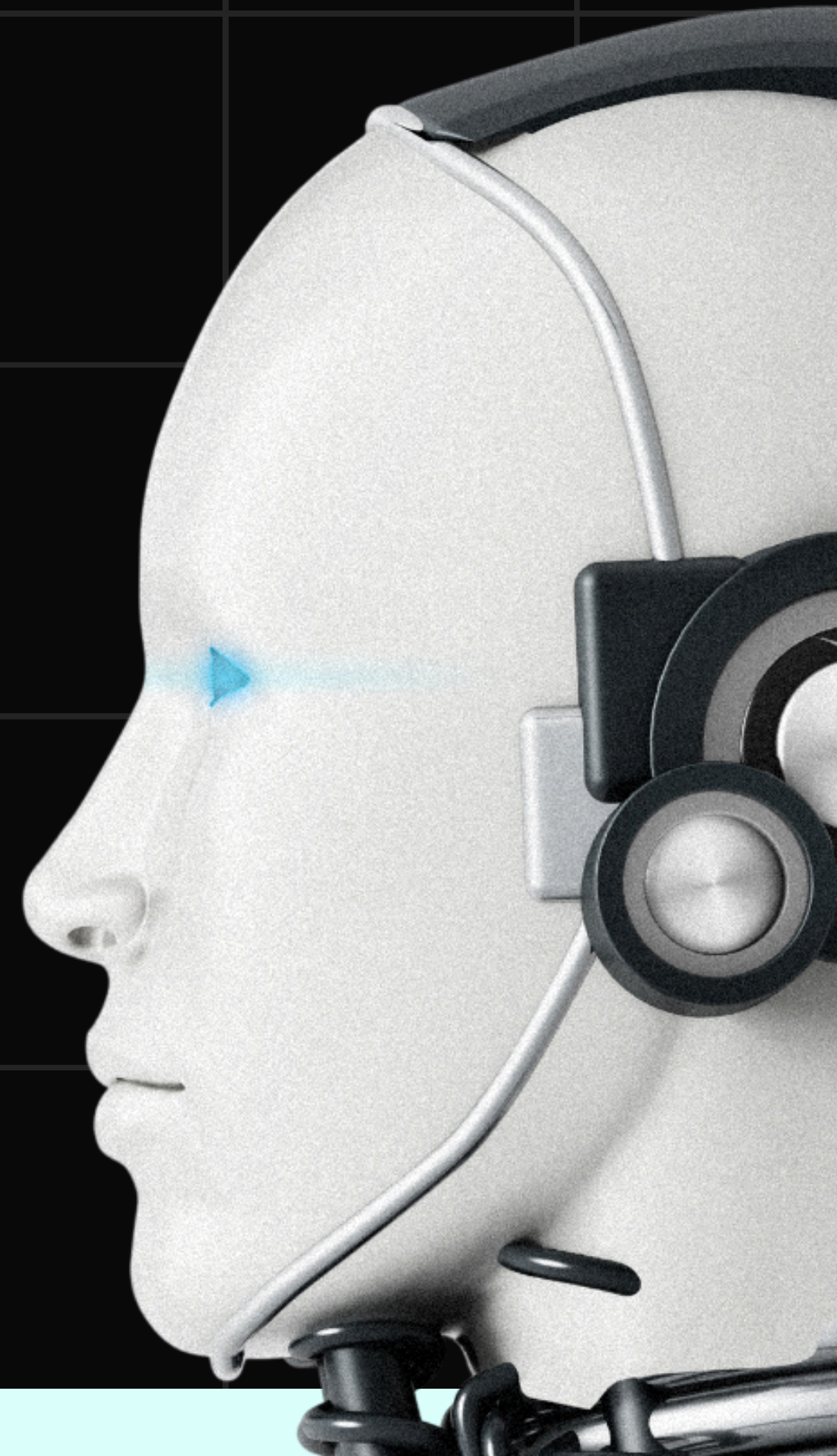
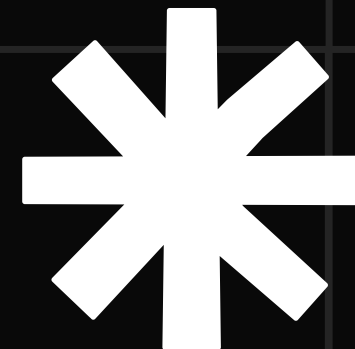
**The "Smart Parking System" is designed to enhance efficiency, safety, and energy conservation in managing parking spaces. The system includes:**

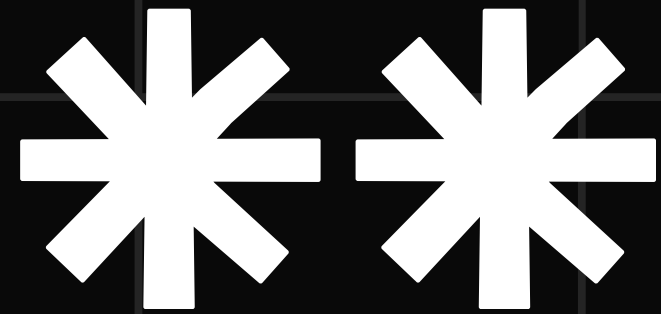
- **Access Control:** Ensures cars only enter through the entrance and exit through the designated exit.
- **Energy-Saving Features:** Lights activate only when a car is present and switch off when the garage is empty. If occupancy exceeds three cars, the entire garage lighting system turns on.





- **Day/Night Functionality:** Uses a light sensor to optimize energy usage—lights remain off during the day and activate at night only under specific conditions.
- **Fire Safety:** A fire sensor detects incidents, triggering alarms and automatically opening the gates to evacuate the garage.

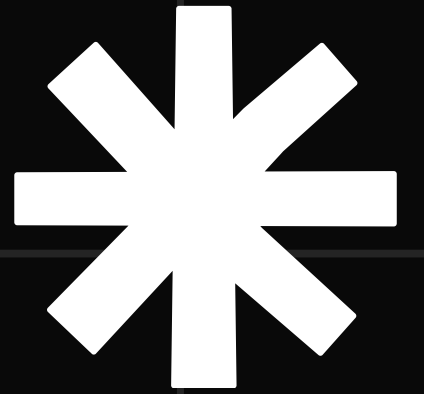




- \* Arduino board
- \* 4 IR sensors
- \* 2 Servo mototrs
- \* 1 Fire detector
- \* 1 Photoresistor
- \* 2 LEDS

# System Components

# SYSTEM DESIGN



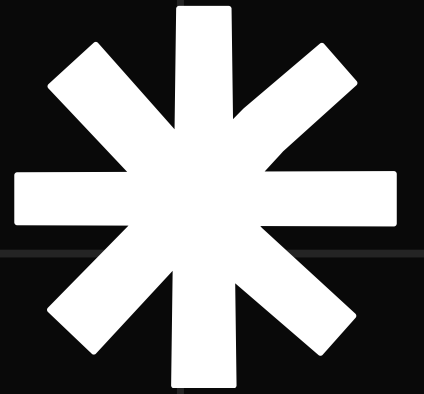
## Exit Gate Operation (ExitGateOperation function)

- **Objective:** Controls the exit gate when a car exits the garage.
- **Components involved:**
  - Exit servo (ExitServo).
  - Exit sensors (*exitSensor1*, *exitSensor2*) to detect car exit.
  - LCD displays "Car Exiting."
  - Parking spots are increased after a car exits.

## Entrance Gate Operation (EntranceGateOperation function)

- **Objective:** Controls the entrance gate for a car to enter the garage.
- **Components involved:**
  - Entrance servo (EntranceServo).
  - Entrance sensors (*entranceSensor1*, *entranceSensor2*) to detect car entry.
  - LCD displays "Car Entering."
  - Parking spots are reduced after a car enters.

# SYSTEM DESIGN



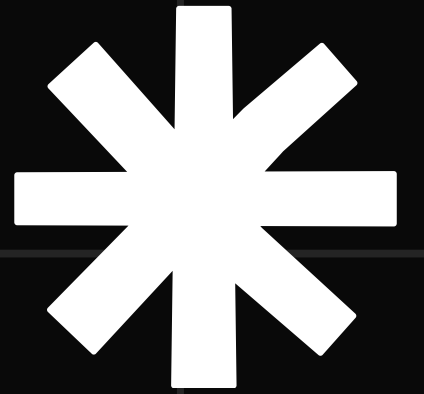
## LPG Detection (lpg\_function)

- **Objective:** Detects if there is a fire based on LPG sensor readings and takes necessary actions.
- **Components involved:**
  - LPG sensor to detect gas levels indicating fire.
  - LED lights and buzzers for fire alert.
  - Servos are locked, and the system is paused for safety.

## LDR operation (ldrOperation function)

- **Objective:** Control LED lights based on light sensor readings to indicate available parking spots.
- **Components involved:**
  - LDR to detect ambient light level.
  - LED1 and LED2 to display parking status: red or green indicating available or not available.

# SYSTEM DESIGN



## Control Feedback (Buzzer and LCD feedback in operations)

- **Objective:** Provide auditory and visual feedback for users.
- **Components involved:**
  - Buzzer for entry and exit alerts.
  - LCD for status updates (e.g., "Car Entering," "Car Exiting," "Fire..Fire").



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Thankyou

@group6

