Car Door Alarm System for Enhanced Safety

This presentation outlines a revolutionary car door alarm system designed to prevent accidental lock-ins of children, pets, and vulnerable individuals, significantly reducing the risk of tragic accidents.

Introduction and Problem Statement

1 Accidental Lock-Ins

Every year, countless children and pets are accidentally locked in vehicles, facing the dangers of heatstroke, suffocation, and even death.

2 Heatstroke Risk

The temperature inside a locked car can rise rapidly, even on moderately warm days, creating a life-threatening environment.

3 Goal

This system aims to prevent such accidents by detecting occupants inside a locked car and alerting drivers and passersby.

Concept Overview

1

Sensor-Based Detection

The system utilizes advanced sensors to detect the presence of living beings inside a locked vehicle.

2

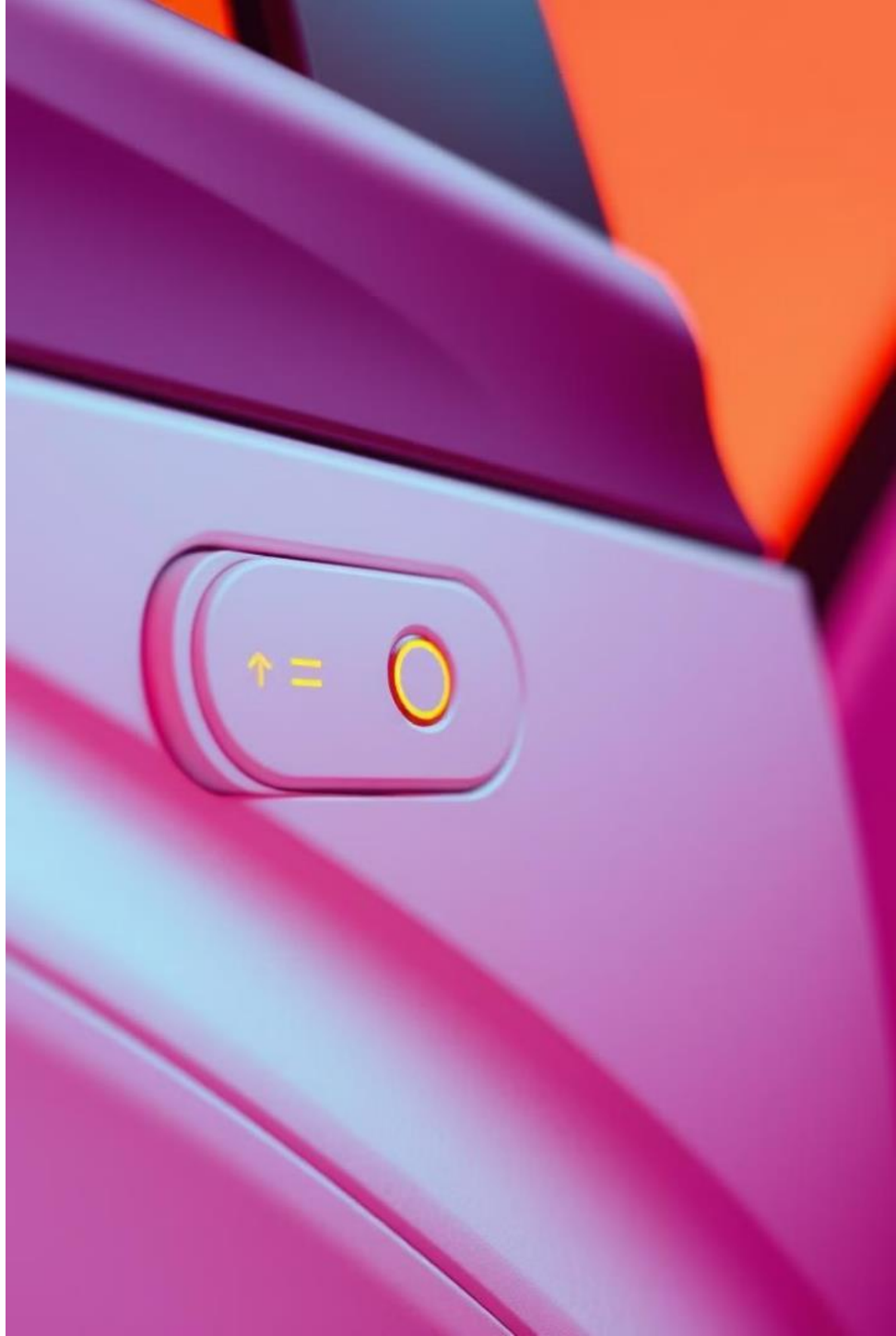
Automatic Alerts

If an occupant is detected, the system triggers a series of visual and audible alarms, alerting the driver and those nearby.

3

Preventing Accidents

By providing timely warnings, this system has the potential to save countless lives and prevent countless injuries.



Key Features

Vital Detection Sensors

- Motion sensors
- Heat sensors

Alert System

- Visual and audible alarms
- Mobile notifications

Smart Integration

- Key fob and dashboard communication
- Lock prevention

User Flow

1

Driver Prepares to Lock

The driver prepares to lock the car, initiating the system check.

2

System Checks for Occupants

The system analyzes sensor data to determine if any occupants are present.

3

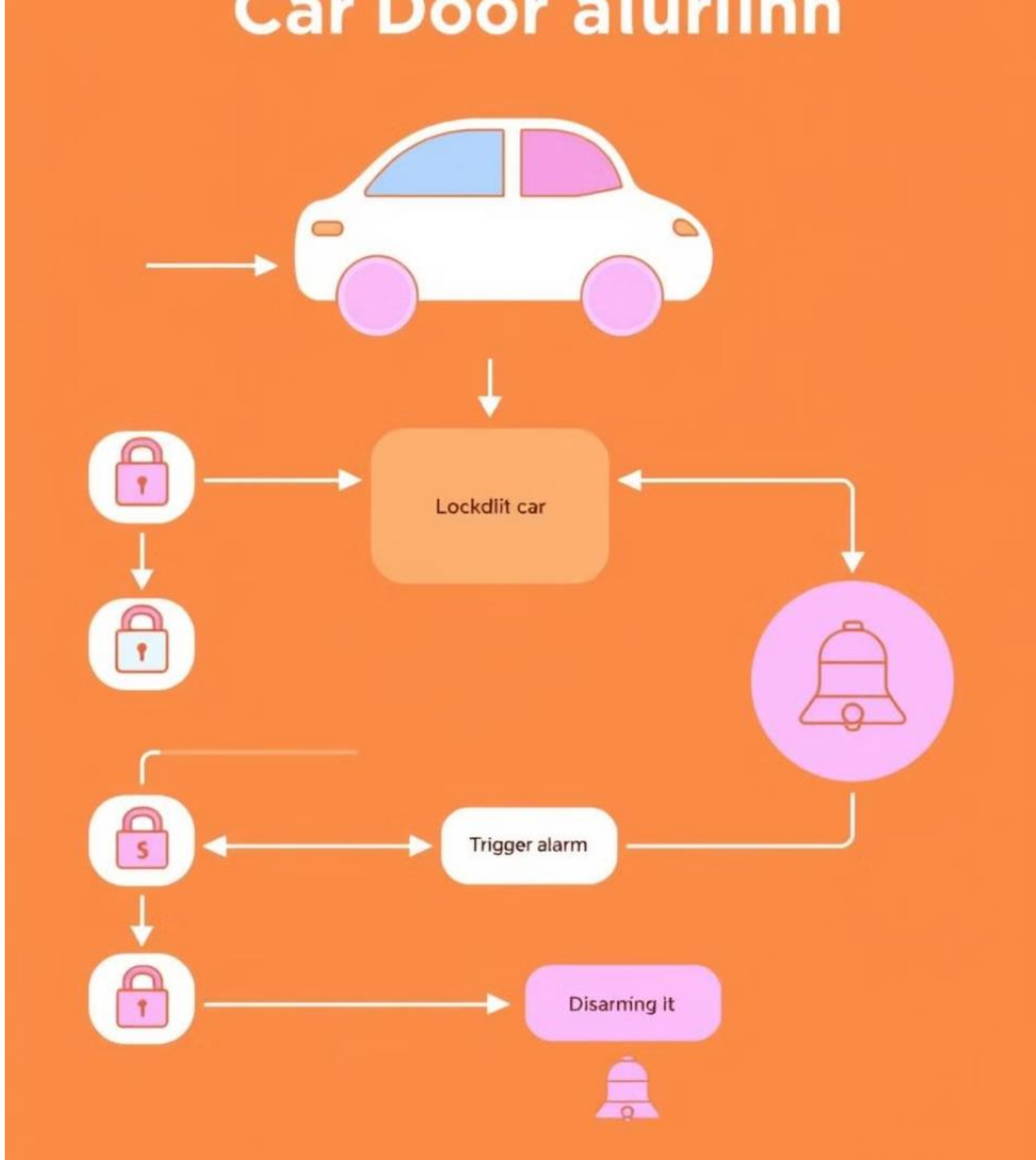
Alert Triggered

If an occupant is detected, the system activates the alarm and sends mobile notifications.

4

Driver Notified

The driver and anyone nearby are alerted of the potential danger, allowing for swift intervention.



Product Features

Detection Accuracy

The combination of motion and heat sensors ensures a high level of accuracy in detecting living beings.

Alert Mechanisms

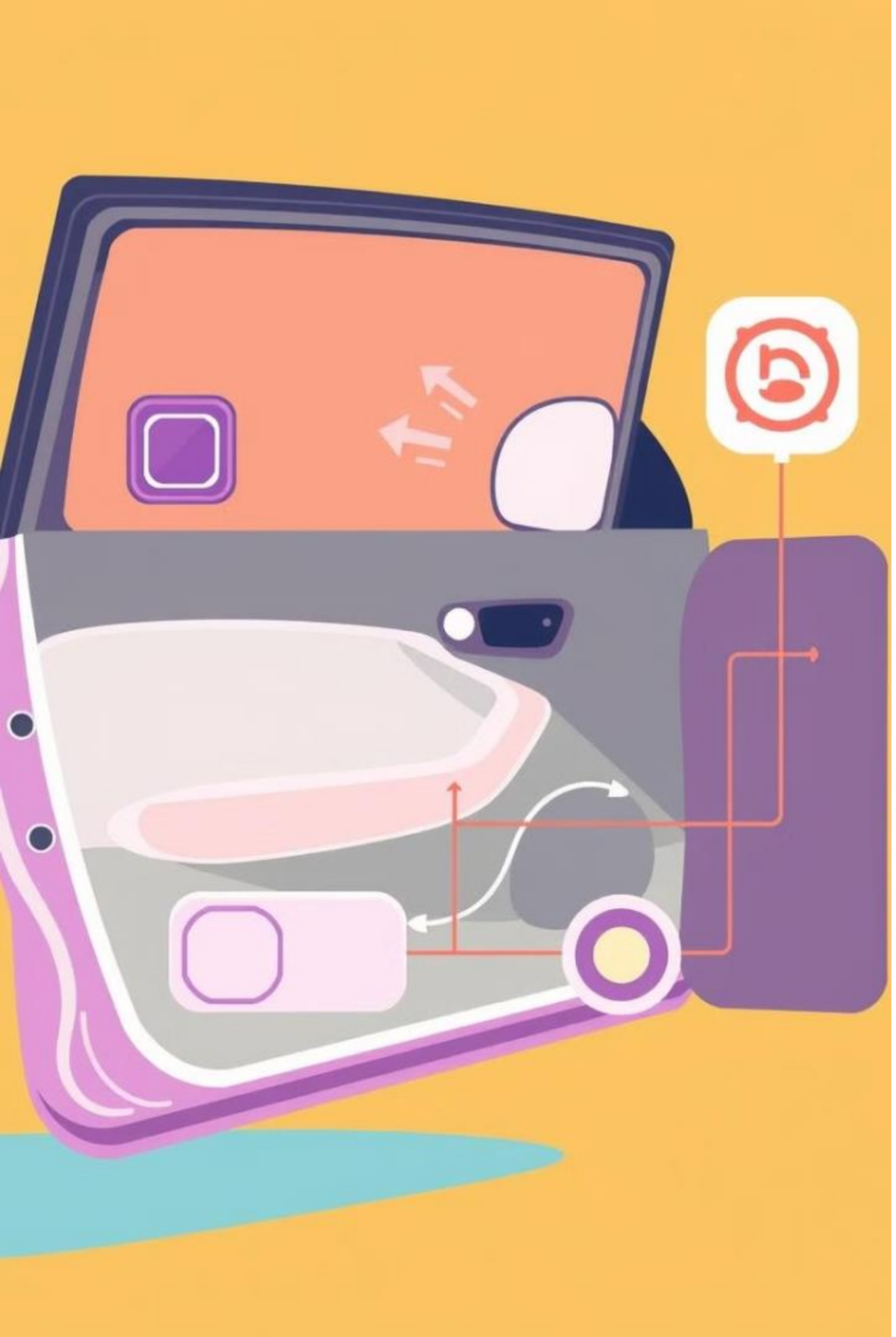
The system utilizes both in-car alerts, such as flashing lights and loud alarms, and mobile notifications.

Integration Flexibility

The system seamlessly integrates with existing key fob and car systems for optimal user experience.

Override Control

The system offers override control, allowing drivers to activate climate control if immediate removal of the occupant is not possible.



Technical Architecture

Sensors (motion and thermal)	Camera (optional, for additional verification)	Mobile App
Cloud Integration	Vehicle Control System (dashboard and key fob)	

SDKs and Software Requirements

Mobile SDKs

iOS and Android SDKs are used for app development and push notifications.

IoT Platforms

Platforms like AWS IoT enable secure communication between sensors and the cloud.

Embedded Systems

Sensors and microcontrollers are programmed for efficient data collection and processing.

Programming Languages

Languages like Swift, Java, and Python are used for app development, sensor programming, and data processing.

Prototype and Working Model

1

Prototype Development

A functional prototype has been developed to demonstrate the system's core functionalities.

2

Testing and Evaluation

Rigorous testing is underway to validate the system's accuracy and reliability in detecting living beings in various conditions.

3

Future Scope

Future development will focus on incorporating AI-based detection algorithms and integrating the system with climate control systems.