

# LIFE SEAT

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## Introduction

Over 550 children have died from being left in a car seat since 1998. Our goal was to design a device that will alert the parents if a child has been left in a non-running vehicle.

## Objectives

- Detect if the child is in the seat
- Determine if a child has been left
- Contact a parent's cell phone
- Have an independent power supply
- Ability to move between two seat bases

## Design

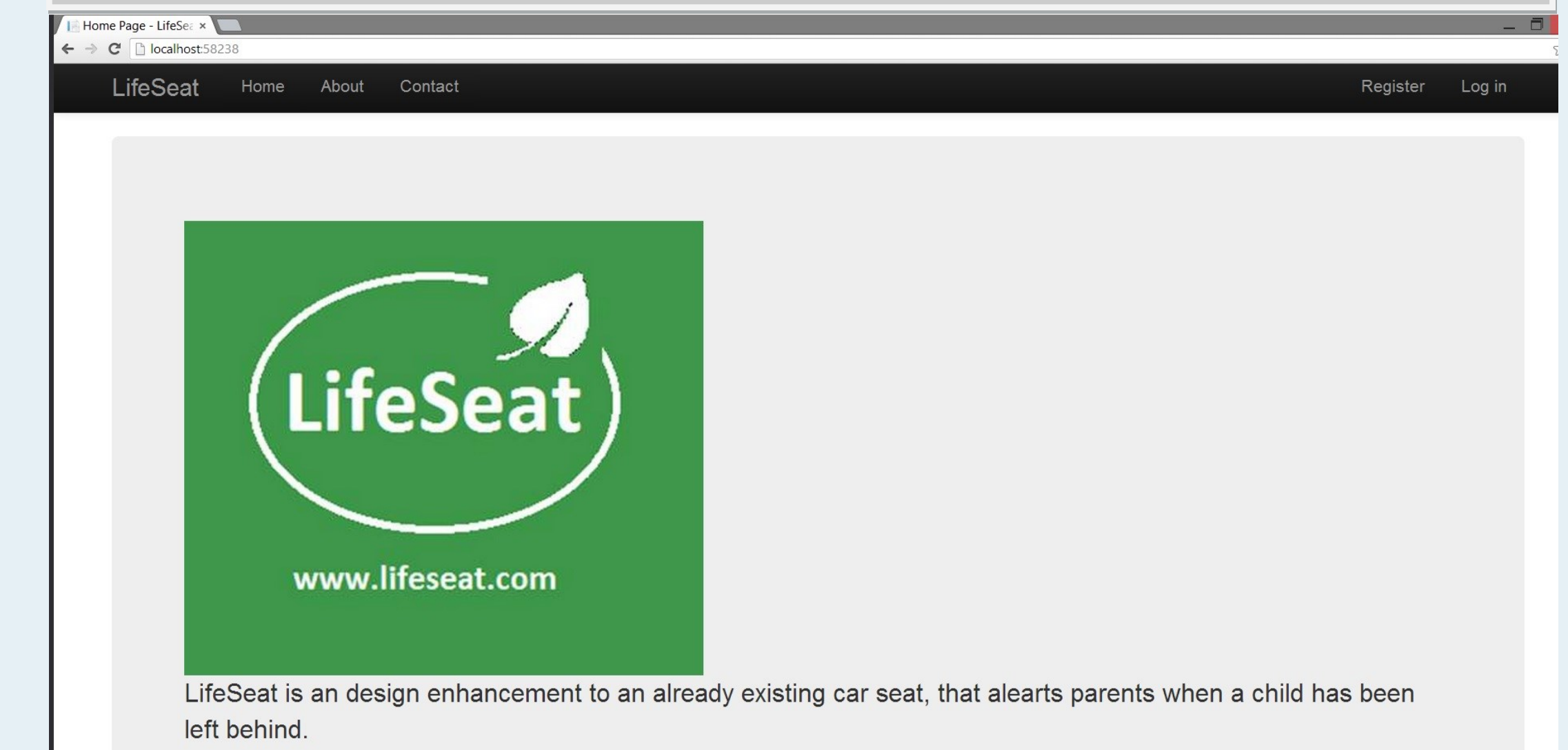
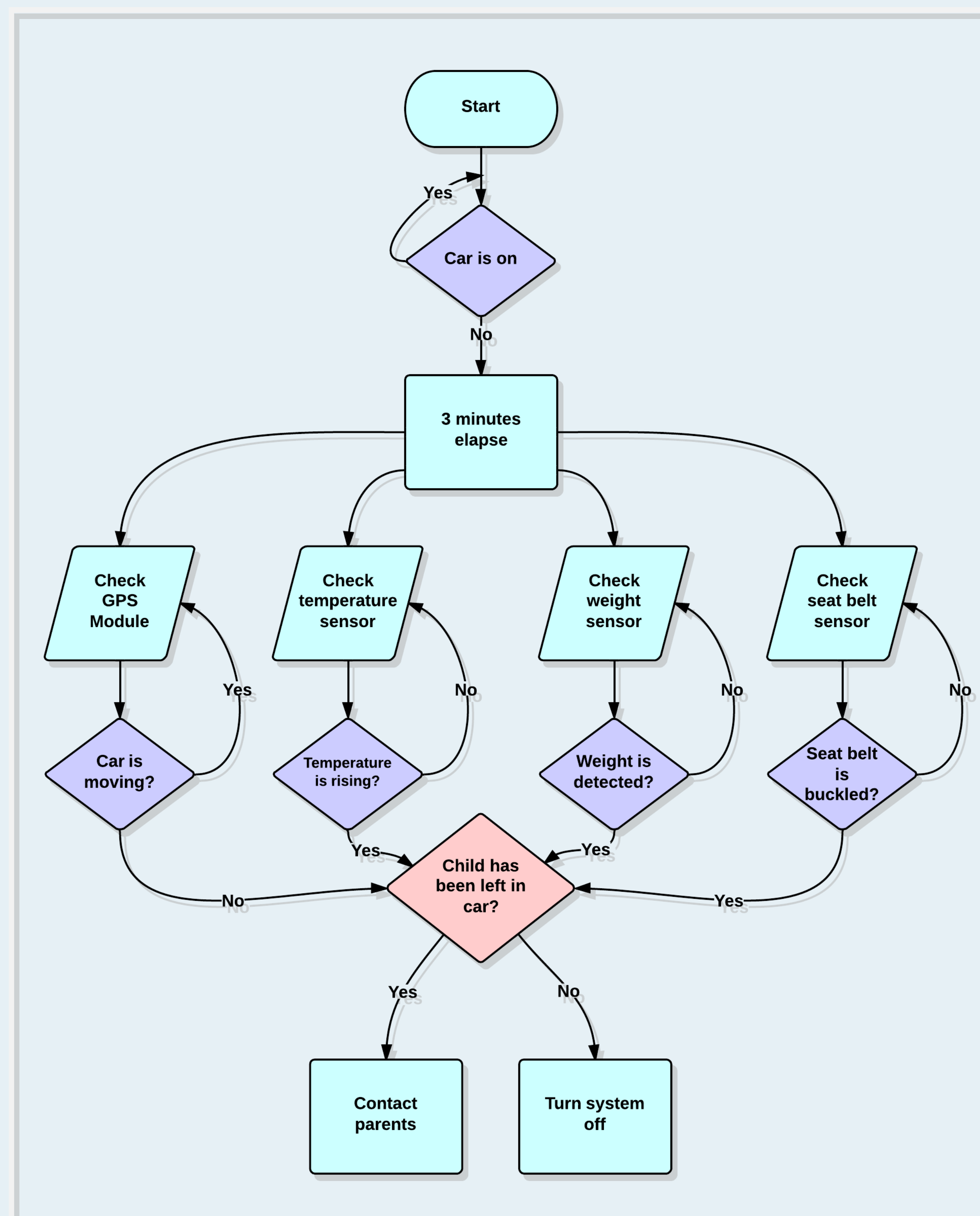
- Weight sensors in the seat along with a reed sensor on the seat belt to determine if the child is in the seat.
- A GPS module to determine if the car is moving along with the cars location.
- Ignition detection and thermistors to measure if the temperature in the car is rising will signal if the car is turned off
- An Arduino Uno will process an algorithm to evaluate the sensors and determine what state the system is in and if the child has been left in the seat.
- A Red/Green/Blue LED easily indicates the state of the system to the parent
- Data server will receive messages from the Arduino and alert the parents cell phone if there is an emergency.
- A charging circuit and battery will ensure that the system will run for a certain time after the car is turned off.
- RFID tags in the seat will communicate a unique ID to the Arduino which can be relayed to the data server.



## Results

- Algorithm and sensors successfully determine if child has been left
- Server sends and receives text messages
- Successfully identifies two different seats
- Entire design does not affect overall appearance of the seat
- Functioning Website

## Behavioral Model



## Conclusion

The constructed LifeSeat successfully integrates multiple systems to detect and notify when a baby has been abandoned in a vehicle. We are confident that this device is more reliable, subtle, and modern than current market products and should be a mandatory feature in car seats.



