Car Seat Monitoring

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Abstract

The device is designed to prevent parents from leaving a child in a vehicle unattended. The device has sensors integrated into a box placed in a car seat that will determine if a child is present in the seat. Once the vehicle is turned off, the child should be removed from the car seat within an allotted amount of time or an alarm will sound.

Goals

- Help parents not to leave a child unattended in vehicle
- Device can be used with any car seat size
- User can adjust the vibration threshold
- Waiting time can be changed by the user.

Design

Horn

ADC to SPI chip

12v Relay

Force resistance sensor

Raspberry Pi

12v Battery
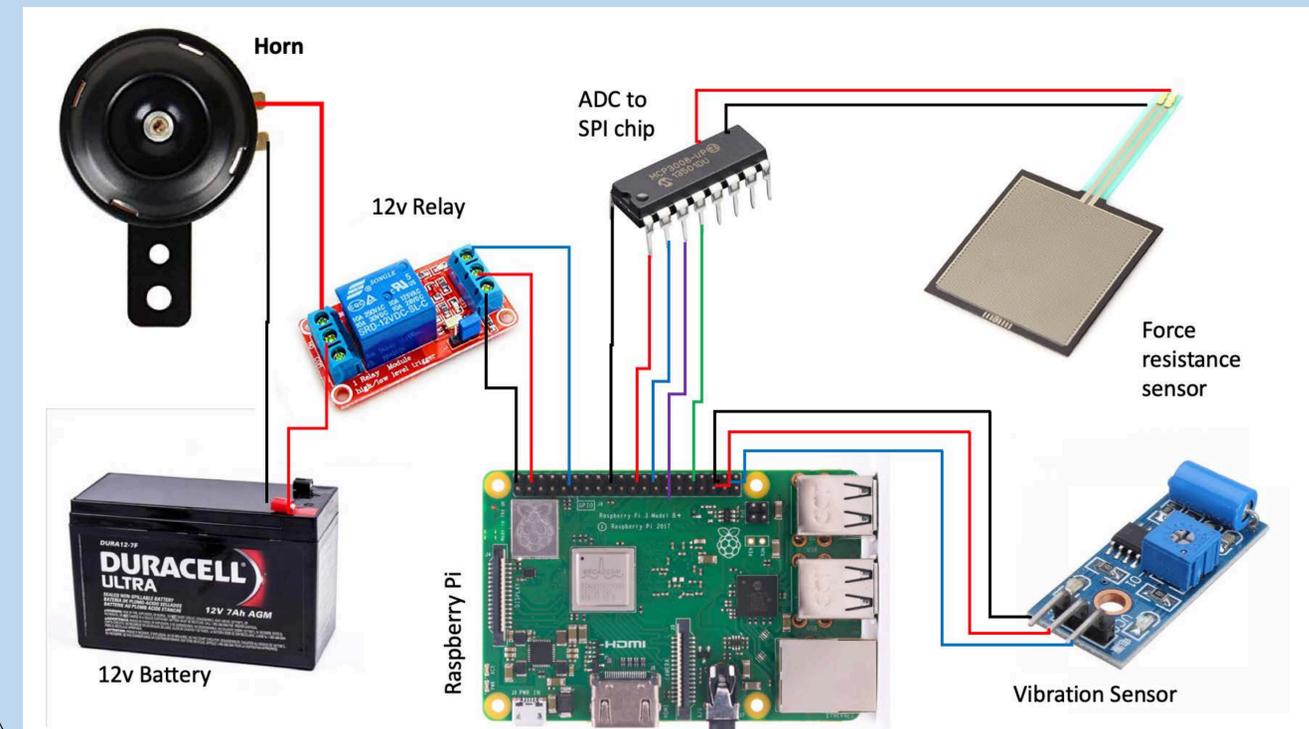
Vibration Sensor

Result

The car seat monitor system is successfully working. The vibration sensor works to determine a car is on or off and can be adjusted by the user. The force resistance sensor works perfectly and can determent whether a child in the car seat or not. A 12v horn is used as an alarm.


```
CAR IS OFF & NO KID IN THE CAR
CAR IS OFF & NO KID IN THE CAR
CAR IS OFF & NO KID IN THE CAR
CAR IS OFF & NO KID IN THE CAR
CAR IS ON & NO KID IN THE CAR
CAR IS ON & NO KID IN THE CAR
CAR IS ON & KID IN THE CAR
CAR IS ON & KID IN THE CAR
CAR IS OFF & KID IN THE CAR!!!!
('Time to set Alarm off:', 5, '!')
('Time to set Alarm off:', 4, '!')
('Time to set Alarm off:', 3, '!')
('Time to set Alarm off:', 2, '!')
('Time to set Alarm off:', 1, '!')
THE ALARM WENT OFF!
THE ALARM WENT OFF!
THE ALARM WENT OFF!
THE ALARM WENT OFF!
THE ALARM WENT OFF!
ALARM STOPPED
CAR IS OFF & NO KID IN THE CAR
CAR IS OFF & NO KID IN THE CAR
CAR IS OFF & NO KID IN THE CAR
^Cpi@raspberrypi:~/Desktop $
```

FRS

Test

The device can be placed anywhere near the car seat. The force resistance sensor should be placed where child will be seated. The system state updates every second.