Project Deliverable I

Design Day Presentation Material

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GNG 1103

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1. Script of 3 minute-pitch

During the first meeting and interview, our client emphasized that children dying in locked cars due to heat strokes and carbon monoxide poisoning is not only a persistent problem in his country, UAE, but also a world-wide concern of parents and guardians. According to NSC Injury facts, on average, 38 children under the age of 15 die each year in the US from heat stroke after being left in a vehicle (NSC, 2021).

Although some children were intentionally left by their parents, most deaths were due to "Forgotten Baby Syndrome," which refers to parents who accidentally leave their child in a locked car. The 80% of temperature increase will occur in the first 30 minutes (NSC, 2021) so it is imperative to get children out of the car as soon as possible. Therefore, there is a need to design a simple and easily-accessible device to notify parents and guardians without making any physical or software modification.

Currently, only vehicle manufactures, such as Hyundai, KIA and Genesis, install ultrasonic sensors that can detect movements inside a car, but they are not standard on all models. Therefore, we need to create a universal system that is compatible with any car model. Elipho Clip 3 is a more affordable and easier solution than ultrasonic sensors but this will not save a baby's life if a parent does not have a phone with them.

Our design consists of three major parts: motion detecting sensors, audio notification system and a photo sensor that will help activate the device once the car engine turns off.

The key advantage of our model is the fail-proof way of activating the device regardless of the deactivation of the car engine. During the last meeting with the client, he expressed his concern about providing power to the device. Since there was no coding solution for the system to determine whether the device is car-powered or battery-powered, we decided to use a light-activated switch circuit; when the car engine turns off, the LED light will also be off, which then triggers the circuit and turns on our detection system.

On top of that, when the car engine turns off and the motion sensor detects a child or a pet in the car, the audio system will automatically play the alarm "ALERT, there is a baby or a pet in the car." This will make sure that the driver checks their backseat before they leave the car. Also, even if the driver still leaves a child in the car, the alarm will keep playing so that pedestrians passing by the car can help the child.

Our device is designed so that it can save a child's life in the shortests yet in a fail-proof way. It is also an affordable solution for all the potential customers. This light and easy-to-install device will help parents and guardians avoid unfortunate accidents in the future.

2. Reference

1.“Motor Vehicle Safety Issues.” *NSC Injury Facts*, https://injuryfacts.nsc.org/motor-vehicle/motor-vehicle-safety-issues/hotcars/.