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SEATBELT WARNING LIGHT SYSTEM

Research:

Vehicles are a crucial part of our day to day life. Ensuring safety while driving or travelling is mandatory. Therefore implementing safety measures while driving or travelling is essential to resduce risks of fatal accidents ensuring safety of the driver as well as others including people in the vehicle and people on the road.One of these safety measures is ensuring fastening of seatbelt while travelling. The primary benefit of wearing seatbelt is that it can reduce chances of fatality during accidents by 50%.

<https://share.google/E7IEu6wS1KSiOZ77t>

<https://share.google/6sGXO92EX6VmPiIEr>

Analysis:

Seatbelt warning light system helps in reminding the passengers to fasten seatbelt, ensuring their safety. Seatbelt warning lights are indicators on your car’s dashboard that alert you if the driver or passengers have not fasened their setbelts.These lights aren’t just a small dashboard feature they are a key part of safety, preventing injuries, saving lives, and helping you stay legally and financially safe.

Ideate:

The purpose of the ideation phase is to design a basic system that turns on reminder lights when seatbelt is not fastened and turns off when seatbelt is fastened.This basic system works on the following principle:

1: Ask for seatbelt status from the user.

2: If the seatbelt is fastened the user has to enter Y then warning light will turn off, if not then the user has to enter N then light will remain on.

3: If the user enters anything other than valid input it will display invalid input.

Build:

#include <stdio.h>

int main() {

char status;

printf("Seatbelt Warning System\n");

printf("Is the seatbelt fastened? (Y/N): ");

scanf(" %c", &status);

printf("\n--- Status ---\n");

if (status == 'Y' || status == 'y') {

printf("Seatbelt is FASTENED. Warning Light: OFF.\n");

}

else if (status == 'N' || status == 'n') {

printf("SEATBELT WARNING! Warning Light: ON.\n");

}

else {

printf("Invalid input. Please enter Y or N.\n");

}

return 0;

}

Testing:

1: If the input is Y.

Output: Seatbelt Warning System

Is the seatbelt fastened? (Y/N): Y

--- Status ---

Seatbelt is FASTENED. Warning Light: OFF.

2: If the input is N.

Output: Seatbelt Warning System

Is the seatbelt fastened? (Y/N): N

--- Status ---

SEATBELT WARNING! Warning Light: ON.

3: If input is invalid.

Output: Seatbelt Warning System

Is the seatbelt fastened? (Y/N): m

--- Status ---

Invalid input. Please enter Y or N.

Implementation:

A simple C program is developed to stimulate seatbelt warning light system. Which takes user inputs for status of seatbelt. Based on it shows if it is safe to drive otherwise will show warning.

Conclusion:

This project demonstrates how basic safety check can be implemented while travelling using simple programming logic. By this small reminder fatal incidents can be reduced to a large extent.Such systems are useful to prevent hazards