Car light controller

DDS (CO202) Mini Project Abstract

-Ashwin Joisa(16CO104)

-Tejas R(16CO148)

Overview :

This mini project aims at creating a car light controller which controls the light based on the different inputs at the switches.

There are several switches that influence the behaviour of the interior light. These are as follows.

* A three position switch (let us call it main switch), the positions of the switch are - OFF/DOOR/ON

* Door switches, operated by opening/closing of the door (one for each door)

* Door key switch, operated by inserting/removing the key in the driver side door

* Ignition switch, operated by turning the ignition ON or OFF

Two positions of the main switch, namely OFF and ON, override other switches and turn the light OFF or ON, respectively.

When this switch is in DOOR position, the light responds to other switches in the following manner.

Typical entry sequence (light turns on at step 2 and gradually turns off at step 5):

1. Unlock the door
2. Open the door
3. Enter the car
4. Close the door
5. Put key in ignition switch
6. Switch on ignition

Typical exit sequence (light turns on at step 2 and gradually turns off at step 6):

1. Switch off ignition

2. Take ignition key out

3. Open the door

4. Exit the car

5. Close the door

6. Lock the door

When the light is off, opening any door turns it on and closing the door makes it turn off gradually.

When the light is on, it times out in 10 sec if there is no event, turning off gradually.

Turning off gradually takes 3 seconds in all cases.

There are numerous other sequences physically possible that need to be identified and the controller needs to be designed to ensure reasonable response in all cases.

We use a combination of sequential and combinational circuits to achieve this.

References :

- DIGITAL DESIGN by Morris Mano