Electromania

Team Event, Freshers-Only

Points: 35

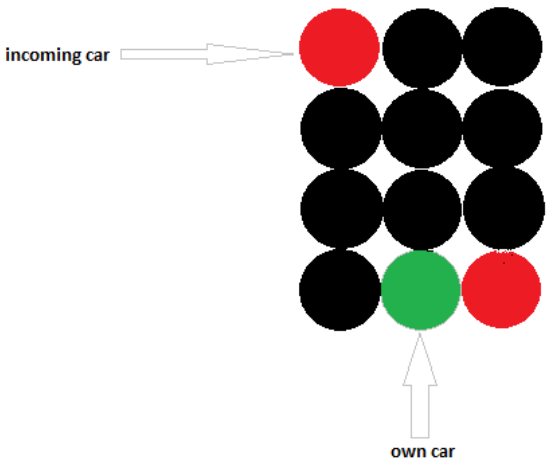
INTRODUCTION:

One of the earliest encounters we had with the world of video games is in the form of hand-held video games. Having one was every child's dream and it was the first item in our birthday list. Well, now is the time to relish your childhood dream by building our own game.

PROBLEM STATEMENT

The aim of the competition is to design and build a **"Crazy Taxi"** using LEDs for display. The object of the game is to avoid collisions with the incoming cars while driving on the wrong side of a busy road.

The participants will have to design the following features of the game.



Compulsory features

Roads of LED: There must be at least 2 roads (rows) of LED with a minimum of 4 LEDs in each rows. A car depicted by a glowing LED must move continuously in each of the rows.

Pathway for Car and Navigation Keys: Left and Right navigation keys must be present to move the car in the vertical direction.

Collision Detection: In case of collision of a car with an incoming car, it must be detected by the circuit and a signal must be generated (either by glowing a LED or any other way possible).

Additional Features:
Apart from the compulsory features, various additional features can be added to the circuit like
1. 2 Cars on the same road instead of 1.
2. Different levels of game with different speed of cars.
3. Scoring Mechanism.
4. Destroy incoming cars.

These are just some of the additional features. Apart from these, any other innovative additional features can be implemented.

RULES AND REGULATIONS

Eligibility & Team structure

- Students belonging to Y14 batch of any program (B.Tech , M.Tech etc.) are eligible.
- Team strength should be minimum 3 and maximum 4.
- There are no restrictions on number of teams from a pool. Though all members of a single team should belong to the same pool.

General Rules

- Only basic ICs (555,4xxx and 7xxx) are allowed. Use of an encoder is allowed. Use of any other special IC should be intimated to us.
- The circuit should be built on a breadboard and can't be soldered/simulated. Do note that the judging criteria favor a proper layout of the components and also a robust circuit.
- Judges decision shall be final and binding on all.
- Judging shall be subjective.

All of the above rules may be subject to change as they deem fit. Change in rules, if any will be highlighted on the following links:

Electronics club website: http://students.iitk.ac.in/eclub/
Takneek website: http://students.iitk.ac.in/takneek/2014/

JUDGING CRITERIA

Judging shall be done on basis of:

- User friendliness of the gadget.
- Robustness and innovation in design of the gadget. (use of logic for the problem statement)
- Bread boarding and layout of ICs.

- Extra features implemented.
- Presentation (either a power point presentation or a neat block diagram can be used)
- Judges would be faculty of Department of Electrical Engineering, IIT Kanpur and/or senior members of the Electronics Club.

POINTS DISTRIBUTION

Parameters	Weightage
Compulsory Tasks Achieved	**20 (5+5+10)**
Logic Used	**20**
User Friendliness of the game	**15**
Additional Features Implemented	**25**
Bread boarding	**10**
Presentation	**10**

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