Embedded Design Challendge

Team Event, Open-To-All

Points: 40

INTRODUCTION:

Everybody likes having their own gadgets. But what if you could make a gadget all by yourself. Here in the Embedded Design Challenge, Electronics club is providing you the opportunity to design your own gadget and play game on it.

PROBLEM STATEMENT:

To design and build a game running on an arduino with the keyboard and GLCD as input and output devices respectively.

The participants will have to design the following features of the device:

Compulsory Features:

Keyboard: Your device should have a PS2 or USB keyboard interfaced with the arduino to give all sorts of input.

Display: The device must have a GLCD interfaced with it as the display.

Game: You need to design a "bubble burst" game. In this game bubbles containing random alphabets will float up/down the screen. You need to burst the bubble using corresponding alphabet on the keyboard. You should display score and time passed/remaining.

Additional Features:

Apart from the compulsory features, various additional features can be added to the device like

1. Game can be made multiplayer
2. Features like displaying high score, various modes (classic, arcade etc.) can be implemented
3. Additional games or apps(e.g. notepad) can be designed
4. Music can be played during the gameThese 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 any batch or program are eligible.
- Team strength should not exceed 4.
- All the members of a single team should belong to the same pool.
- Maximum 3 teams are allowed per pool.

General Rules

- Use of pre-built modules is **strictly** prohibited. All the modules should be self-made. You can however use Arduino boards.
- Only basic ICs (4xxx and 7xxx) and 8-bit microcontrollers are allowed. Use of any other IC should be intimated to us.
- **The final circuit must be soldered on a General Purpose Board or on a PCB. Circuits on breadboard will automatically lead to disqualification.**
- The software written should be original and not copied from any other source. You can however use libraries.
- 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/2013/

JUDGING CRITERIA

Judging shall be done on basis of:

- User friendliness of the gadget.
- Robustness and innovation in design of the gadget. (logic used and its implementation)
- Layout on PCB/GPB and Soldering
- Extra features implemented.
- Power point Presentation

Judges would be faculty of Department of Electrical Engineering, IIT Kanpur and/or senior members of the Electronics Club.

POINTS DISTRIBUTION

Parameter	Weightage (%)
Compulsory Tasks Achieved	20 (5+5+10)
Logic used and software implementation	20
User Friendliness of the device	15
Additional Features Implemented	25
PCB/GPB layout and soldering	10
Presentation	10

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