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Electromania

Problem statement: The objective is to design a 2D "Shoot the enemy plane" game using a self-fabricated LED Matrix as the display and the game will be played by buttons/ self-fabricated handheld joystick.

Compulsory Task: The teams need to implement following:

* A self-fabricated LED matrix of minimum size 8x8 will be used for display. A particular pattern of glowing LEDs should be used to represent the player's plane.

* One can either use an accelerometer or tilt switches to move the controlled plane left or right. Shooting and other functions will be performed by buttons.

* Enemy will be represented by a different pattern of glowing LED moving downwards. At least one enemy should be coming at any given time.

* The defending plane fires a missile with the press of a button on the joystick, which will be represented by a glowing LED moving away from the plane. When the missile collides with incoming enemy planes, it destroys them.

* Aim of the game is to protect the controlled planes from colliding with the enemy planes by destroying or evading them, as long as possible.

Any other extra feature can also be implemented.

Note that though the extra features contain a significant portion of the allocated marks, but they would be taken into consideration only when the participant team has fully implemented the compulsory tasks.

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General Rules:

• The gaming set-up should consist of 2 modules. The display module (ie. The LED matrix) and a controller (Joystick). Only joystick should be held while playing the game.

• Only self-fabricated LED matrix must be used for primary display purpose. Use of any other display device should be mentioned beforehand and verified.

• Only basic ICs (4xxx and 7xxx), 8-bit microcontrollers and accelerometers are allowed. Use of any other IC, sensor or other component should be intimated to us and its application should be justified during presentation.

• The participants may solder on any general purpose PCB. Assembly on printed circuit boards can also be done, only if these have been specially fabricated by the participants.

• Boards from readymade kits should not be used. Participants using printed boards should bring along photo plots as a proof of originality.

• Please note that the judging criterion favours a proper layout of the components along with a robust circuit.

• The software written should be original and not copied from any other source

• The participating team must necessarily register themselves on the event website.

• Abstract submission should be done by the Team leader from the id he has registered on Techkriti's website.

• Failure to implement the above requirements would make your design ineligible for the competition.

• The teams must be able to provide the working proof (photo, video, code sample) if and when asked before their participation is confirmed for the final event.

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• The teams must adhere to the spirit of healthy competition. The teams must not damage their fellow participants' circuit in any way. Judges reserve the right to disqualify any team indulged in misbehaviour.

• Judges decision shall be final and binding on all.

• The organizers reserve the rights to change any or all of the above rules as they deem fit. Change in rules, if any will be highlighted on the website and notified to the registered participants.

Judging Criteria:

• Judging would be subjective.

• All basic compulsory features should be implemented and only after their evaluation would the extra features would be considered and assessed.

• The effectiveness of the hardware and software used in solving the problem statement.

• User interface of the device.

• Robustness and innovation in design of the device.

• Cost effectiveness of the device.

• Extra features implemented, may add much to your score. They should complement the original design.

• Presentation (either a PowerPoint presentation or a neat block diagram can be used).

• Points Break-Up would be informed at the time of call for abstracts.

• Judges would be faculty of Department of Electrical Engineering, IIT Kanpur.

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Abstract:

Once registered, in order to qualify for the event all the participants need to submit a PDF documents of the abstract in the mentioned format.

- The abstract format can be downloaded from the website.
- All the abstracts must be sent at ecdc@techkriti.org.
- Only one abstract submission is allowed. In case more than one abstract is received from a team, the latest submission will be considered.
- Last date of abstract submission will be informed later.
- If you have not been able to submit the abstract by the deadline, contact the managers