10TH 13TH OCT

# EFFULGENCE '17

BEATING THE INVINCIBLES

A techno-management fest

# MAZE SOLVER

## Mission objective

Artificial intelligence will always be the centre of attraction of all. In this event we will consider the case like blast in japan's atomic reactor that can not be controlled by human so far. The autonomous robot with artificial intelligence can be the best solution. Participant has to make an autonomous robot that should follow the line and wall while traversing the whole arena.

## Event structure:

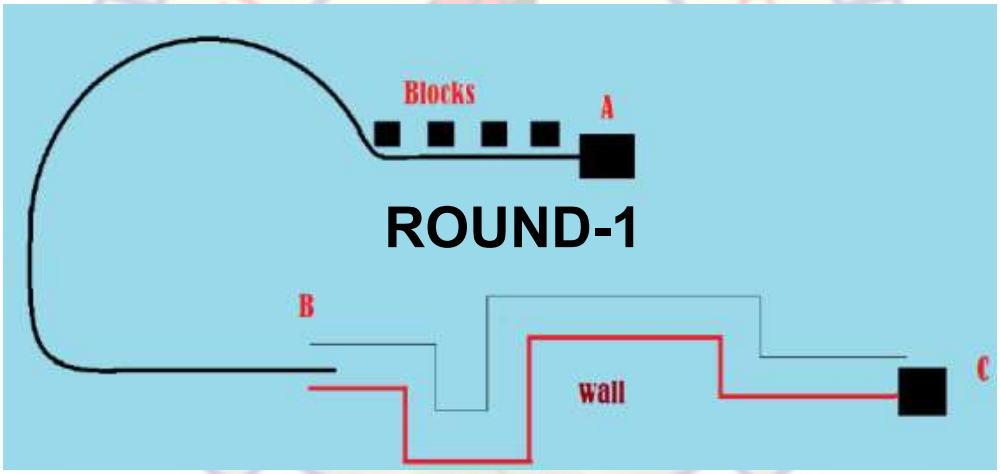
The event would be organized in two rounds.

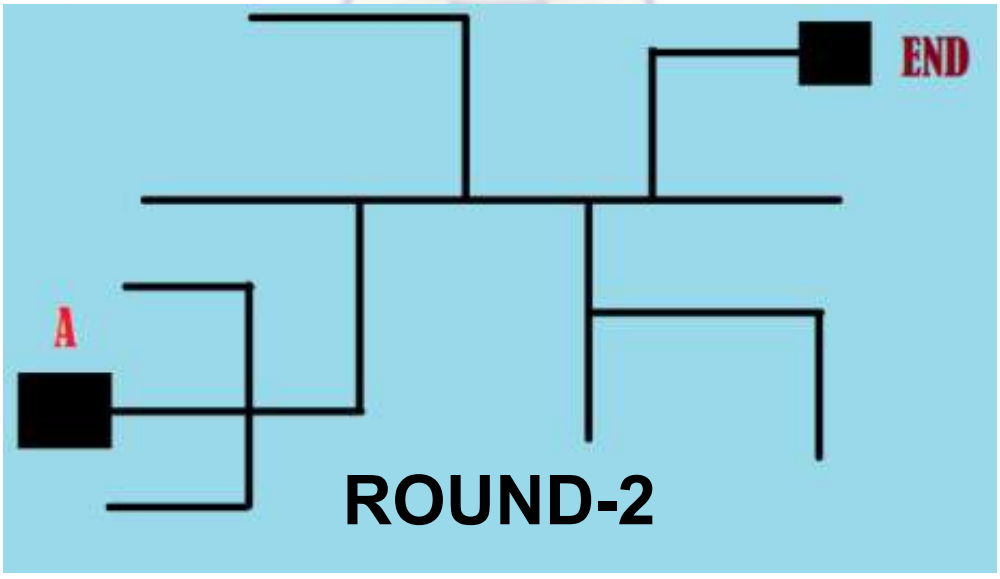
**Round 1:**

1. Line following & counting blocks.
2. Wall following.

**Round 2:**

1.Maze exploring.




# Robot control:

- You can start the robot at the beginning of the trial and no human intervention is allowed thereafter. If human intervention is necessary, the ongoing trial will come to an end. Teams may go for another trial if they have sufficient time left.
- The judges can ask for an explanation of any mechanism on the bot and there would be an immediate disqualification of defaulters of any kind.
- The bot must be fully autonomous and has to perform the specified tasks :

## Round 1:

**1.Line following & counting blocks:**

- It must start from point A and reach point B by the principles of line following.
- There would be any number of 5cm & 10cm blocks placed alongside the line .
- The bot must simultaneously count the no of 5cm and 10 cm blocks and give the output by displaying the information on the digital display system within the bot or by blinking the LED and blink of LED should be equal to the total no. of blocks.

**2.Wall following:**

- After reaching the point B by line following it then has to travel to another point C by following a path , bounded by continuous wall on one side and a 450mm line running parallel to the wall on the other side ,by the principles of wall following . It would then reach C.

## Round 2:

**1.Maze exploring:**

- It is the main part of the event.
- You shall place your bot at point A in right direction , in order to perform maze exploring .
- Robot should follow the line following while traversing the whole maze and should remember the turns that it take while going from starting point (A) to end point. Then it should go from shortest possible path from end point to starting point using some sorting mechanism. Here the maze will have only one path to go from starting point to end point and also there will be loop in the maze.

**NOTE:**

- The side of placing of the blocks with respect to the black strip is fixed and is according to the diagram of arena shown.
- For key dimensions (height of the wall etc.,) refer to the diagram of the arena shown.


## General Rules:

- Each team can have a maximum of 5 participants.
- A team may consist of students from different colleges.
- Certificates of Excellence will be awarded to the top three teams.
- No damage should be made by a bot to the arena or to other team's bots during the match any manner.
- Bots should not be disassembled until the results are declared.
- The organizers reserve the right to change the rules as they deem fit.
- When a team is called for match, they must report within five minutes.
- Judges decision will be final.
- During wall following, a line would be drawn at a distance of 400 mm from the wall. The bot must not cross this line at any cost. In case the bot crosses the line, then human intervention would be allowed and points would be deducted for the same.
- The arena shown is just for reference .
- Hard coding is strictly prohibited.
- The Mat for line following , shape of the wall for wall following , the no of 10cm blocks and their relative placing will not be disclosed before the event.
- Certificates of participation will be awarded to each participant.

## Bot Specification:

- During the whole event the bot must fit within a square of 250X250X250 (lXbXh). Dimensions in mm.
- For obstacle avoidance team can use any sort of technology/sensor as far as it fits in the dimension mentioned and also it should not be factory made or commercially available setup.
- The wire used to power/feed the bot should remain slack at all times.
- Each team has to bring its own power supply for its robots. The voltage difference between any two points on the bot must not exceed 15 volts.
- Teams are advised to use an on-board power supply. In case they are using external power supply they will be responsible for any problem created by entanglement of wires.
- Bot's code will be checked for hard coding before trial is allowed.

## Querry/Help

### Event Co-ordinators:-

Shashank Singhal(Final Year)

Jitendra kumar (+91-9758044493)
Email-ID- jkmathuriya@gmail.com

Rishabh Jain (+91-9759508894)
Email-ID- srishabhjain3108@gmail.com