TECHNOVANZA

Taking technology to society

ROBOMAZE

INTRODUCTION: We live inside a place that seems to have no way out.... You can't stay here forever because you don't belong here…Run like your life depends on it....because it does! Robomaze is a competition in which the mechanical bot has to navigate through the maze collecting as many checkpoints as possible and exit the maze in the shortest possible time.

OBJECTIVE : Objective is to build a manually controlled bot as per given specifications and to solve the maze.

PARTICIPATION CRITERIA:

Any team can participate in Robomaze. A team may consist of a maximum of **4 members**. These members can be from same or different institutes. Only 2 members of a team can be present at the arena. 1 player is the controller of the bot and the other holds the wire. If a team consists of more than 1 member then the **2 players** will have to switch their positions with each other after every round.

CERTIFICATE POLICY :

- Certificate of participation will be awarded to all the teams and certificate of excellence will be given to the top three teams.
- Disqualified teams will **not** be considered for any certificates.

GAMEPLAY:

1. In this event your bot will have to go find a way out of the maze going through checkpoints to gain points.
2. For the checkpoint to be claimed, 75% of the bot should be on the checkpoint, otherwise the points for the checkpoint will not be considered claimed.
3. In case of a tie, time will be the deciding factor. If the teams have exactly same points and time then both teams will qualify.
4. This event consists of four rounds as stated. For each round a new maze will be given which will be disclosed on the day of the event.

I. **Qualifier Round** : Each team will run its manually controlled bot through the maze to collect as many checkpoints as possible. This round is the qualification round to enter the 2nd round. *(Time Limit: 2 minutes.)*

II. **Quarter Finals**: Qualified teams will compete to reach the semi-final round. Top 4 teams will qualify for Semi-final round. *(Time Limit: 2:30 minutes.)*

III. **Semi-Final** : 4 teams will compete to reach the final round. Participants have to reach specific checkpoints as given by the coordinator and finish the maze in given time. If the participant does not finish the maze in the given time then the last checkpoint collected will not be considered. Top 2 teams qualify for the Finals. *(Time Limit: 3 minutes.)*

IV. **Final Round:** Top 2 teams will compete against each other for the winner's position. This will be a 1 versus 1 round. Rules and arena for this round will be disclosed on the day of the event**.** ***(There will be no time limit for this round.)***

Note: The maze design will change after every round.

GENERAL INSTRUCTIONS:

1. Arena should not be damaged under any circumstances. Doing so may lead to disqualification.
2. Any part of the bot should not detach/ be left in the arena.
3. Bot will be considered eliminated if it is immobile or cannot perform linear movement within 30 seconds.
4. Pulling wires to handle the bot would result in warning and 2nd warning will lead to reduction of 10 points from the score.
5. The organizers have the right to disqualify any participant indulging in malpractices.

6. If the bot gets stuck at any point and needs manual intervention then it will make the bot to restart from the last checkpoint crossed. Only coordinators can touch the bot in that case, team members cannot touch the bot during its turn.
7. The decision of the organizers is the final decision and cannot be debated on.

Note: Any violation of these rules will constitute immediate disqualification from the contest and ineligibility for the associated prizes.

SPECIFICATIONS:

BOT SPECIFICATIONS:

1. Bot can be wired or wireless.
2. Wireless should have a minimum range of 16 feet.
3. Wire length must be greater than 16 feet.
4. Bot dimensions: 25*25*25 (l*b*h) centimetres with a tolerance of 10% (2.5 centimetres)

ARENA SPECIFICATION:

1. Arena dimensions: 16x16 feet.
2. Maze compartment dimensions: 1.25 ft. x 1.25 ft.
3. The arena will have a plywood base.

MAZE LAYOUTS:

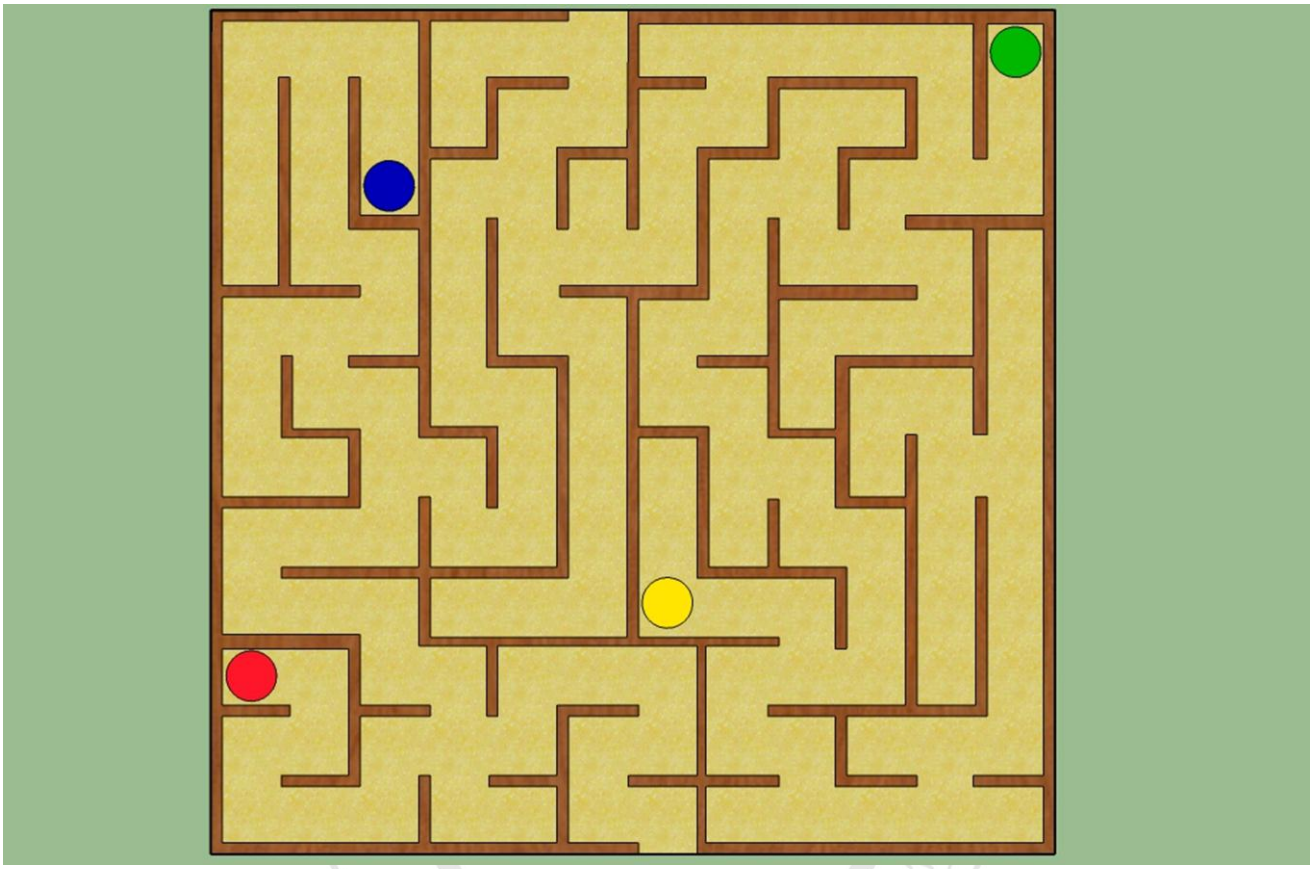

Figure 1: 2D layout of a ROBOMAZE

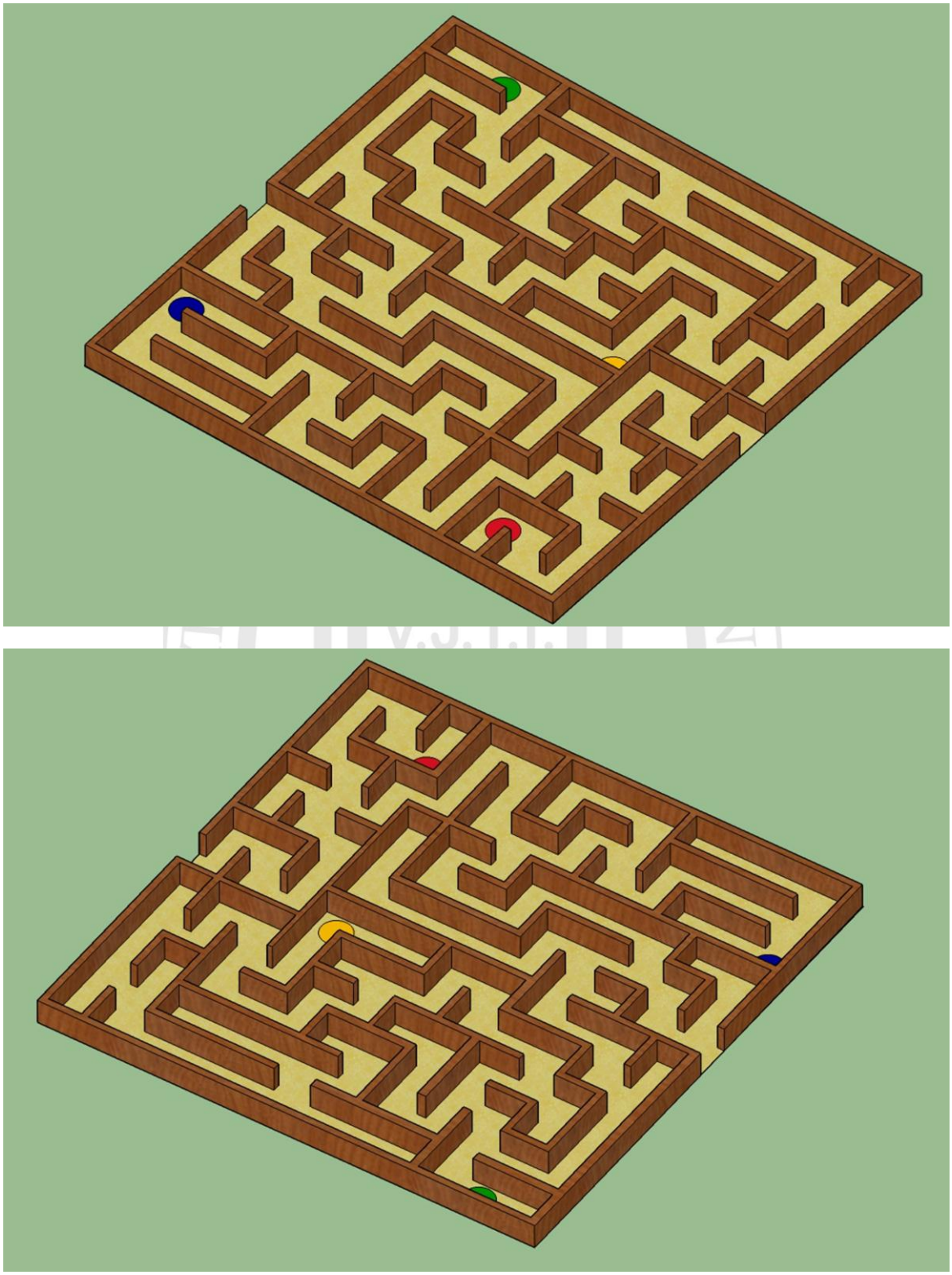

Figure 2: 3D layouts of ROBOMAZE

SCORING SYSTEM :

1. The scores on the checkpoints are 15, 20, 30 and 40. They will be colour coded on the maze. (Eg. Red = 15, Blue = 20, Green = 30, Yellow = 40)

2. The points gained by finishing the maze is given by X*20, where X= number of checkpoints claimed by the participant.

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