



ROBOTRICKS

Team Event

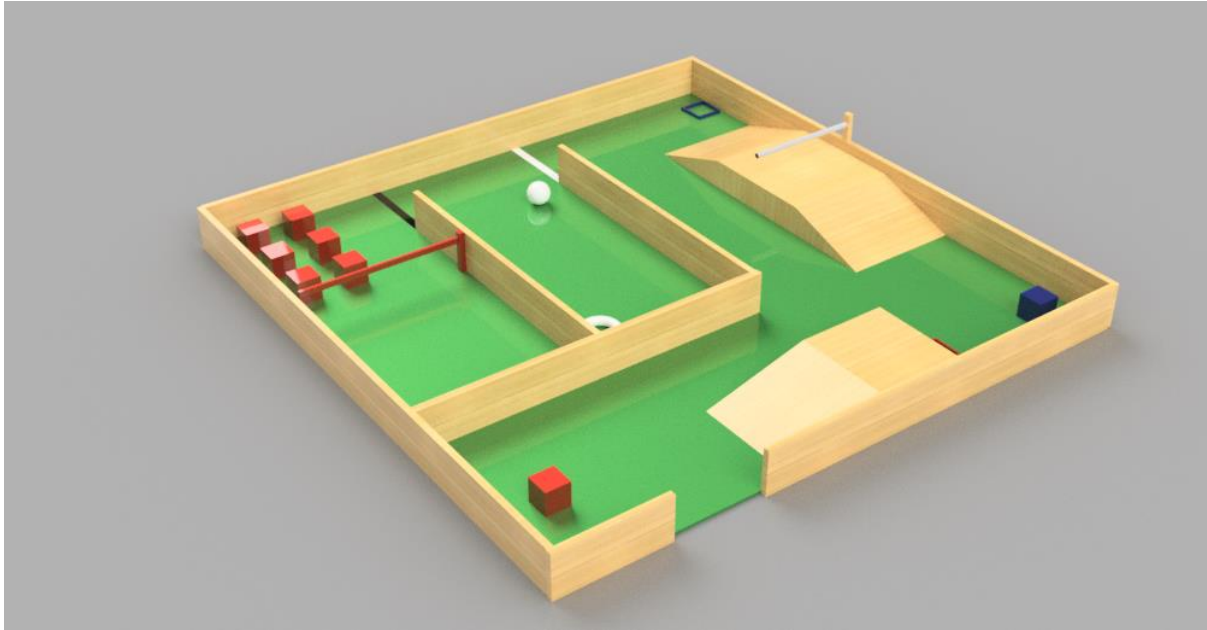
Points: 30

Arena View 1:

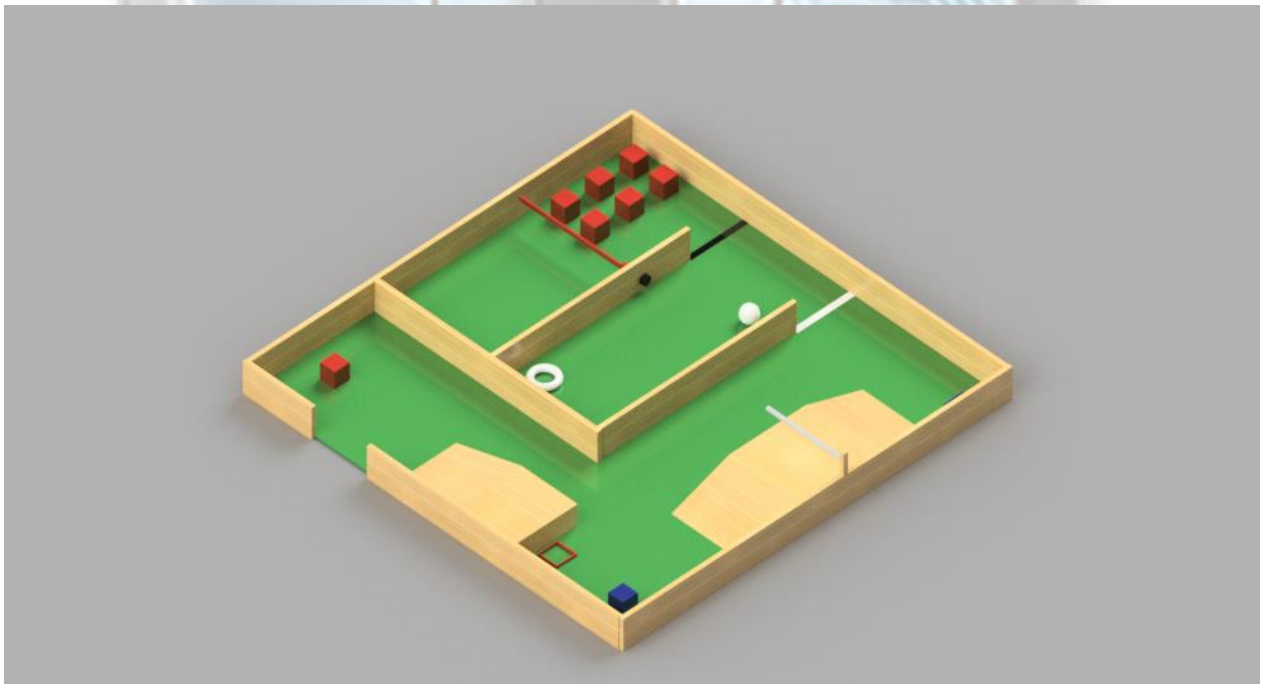




Arena View 2:



Arena View 3:





Arena View 4:



GAMEPLAY:

The whole arena is colored in green. The dimensions of various parts have been shown in the above pictures. 1 strip of black and white color each have been placed randomly in the arena, which will serve as checkpoints.

The teams need to start from the starting area of the arena.

*At most 8 teams are allowed per pool for this event.

NOTE:

- A.) All the blocks have to be dropped in the corresponding baskets.
- B.) A team will be granted points only once for detecting each strip.
- C.) A team can perform the below given tasks in any order.

TASKS:

- 1.) As soon as the bot enters, it will encounter a red block, pick it up and climb the wedge, drop the block from the wedge into the basket directly below it and come down the wedge. (50pts)

*An alternative route has also been provided which does not involve going over the wedge but will have to go besides the wedge and place the block in the basket (10pts).



2.) The task is to pick the blue block and pass a bridge and drop it in the corresponding basket. The bot needs to avoid any contact with the gate (which remains open for 10s and remains closed for the next 5s) while climbing up the wedge (a collision with the gate may cause destruction of the bot). (50pts)

*An alternative route has also been provided which does not involve going over the bridge and completing the task, but only 10 points will be given for this case.

3.) The task is to detect the white strip and glow a red LED (80pts)

4.) The task is to pick the ball and place it in the basket (basket height 10cm). (80pts)

*For entering the free-zone (refer -Pt.6), the bot needs to press a button placed near the black strip (refer Pt.5)

5.) Pass the checkpoint with black strip and glow the green LED after detecting the strip (100pts)

6.) The bot encounters six red blocks. The task is to stack them in free zone (red colored area in the arena). The points for block at nth position will be given as $10 \cdot (3^{n-1})$, n = position of block in a stack (eg. bottom - 1,...). One is allowed to form multiple stacks of different heights. A penalty of 50 pts will be imposed if the ball is not placed in the basket before entering the free zone.

Arena Description:

1. Arena Size:

- a) Length = 2.00 m
- b) Breadth = 2.00m

2. Block Sizes:

- a) Total number of blocks = 8 (6 in freezone)
- b) 8 blocks (7 red, 1 blue) of size: 8cm x 8cm x 8cm

3. Entrance to the arena is 30cm wide.

4. Wedge, Bridge:

- a) Bridge- Width = 40cm, Height = 10cm, Length = 100cm
- b) Half wedge- Width = 35cm, Height = 10cm, Length = 65cm

5. Baskets:

- a) Total number of baskets = 3

6. Automatic Gate on the bridge:

- a) Open for 10s then closed for 5s
- b) Length = 40cm

7. Two strips have to be detected ~ 1 white & 1 black.



S.No.	Parameter	Points
1.	Placing the RED block while going over the wedge	50
2.	Placing the RED block without going over the wedge	10
3.	Placing the BLUE block after crossing bridge	50
4.	Placing the BLUE block without crossing bridge	10
5.	Lighting the LED while crossing WHITE strip	80
6.	Placing the ball in the basket	80
7.	Lighting the GREEN LED while crossing BLACK strip	100
8.	Stacking nth block	$10*(3^{(n-1)})$
9.	Manual Interference	-50
10.	Going out of the arena	-30

In case of manual interruption, the corresponding team will have to start from the last basket in which they placed a box.

Rules:

1. The bot size should fit in box of 25*25*30 cubic cm initially.
2. You have to use LED's to distinguish between the colours of stripes and arena i.e. white, black and green.
3. The bot has to be kept within the starting point initially.
4. The bot has to move within the arena at all points.

Disclaimer:

In case of any discrepancy, the final decision lies in the hands of the co-ordinators.