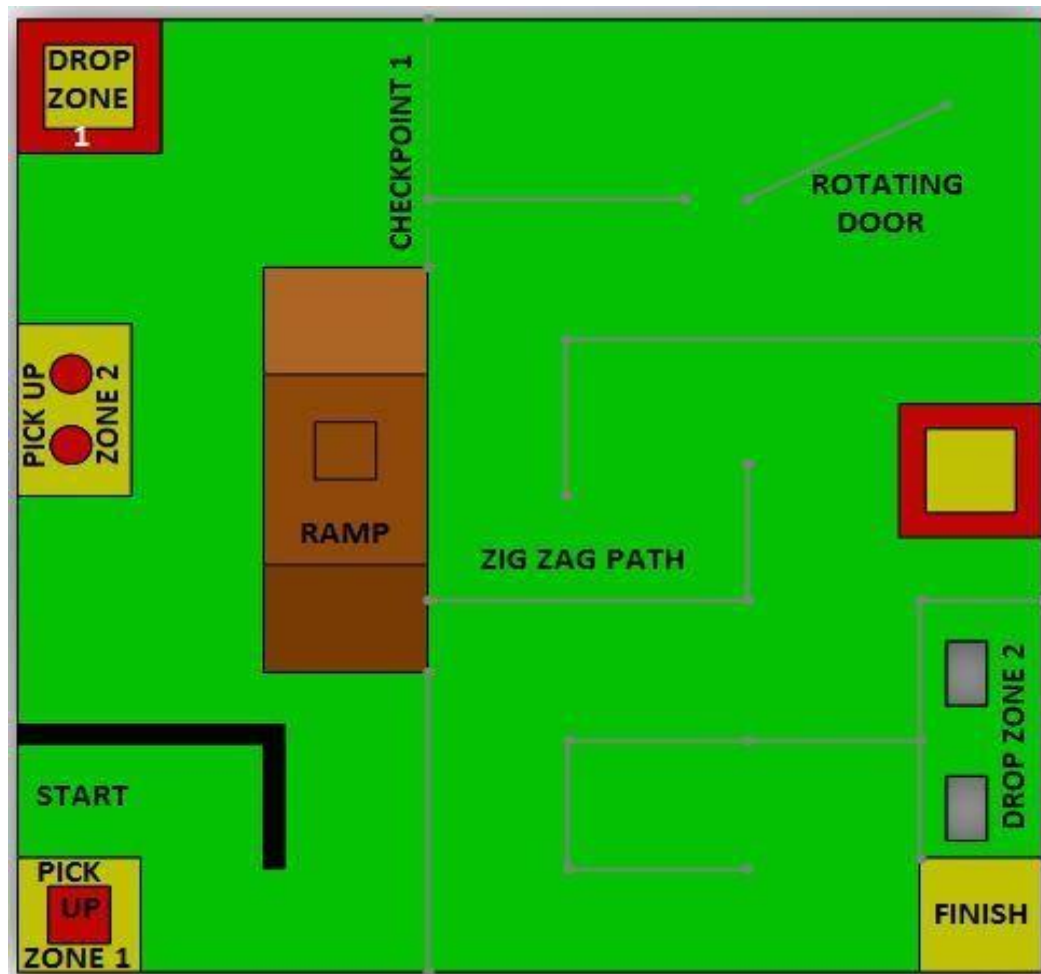


# DROP IT

## GAMEPLAY

### ROUND 1:

The objective is to transverse the robot quickly through the maze and place the objects (blocks, cylinder) at a specified location.



ARENA FOR ROUND 1

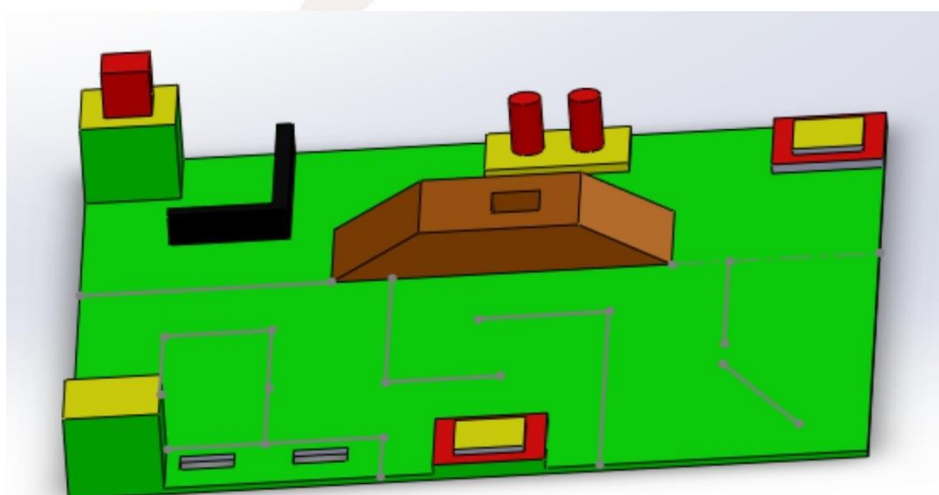
## PROCEDURE

1. The game starts from the zone marked as START.
2. Cubical block of dimensions 10cm X 10cm X 10cm will be placed at pickup zone 1 on another block of height 10cm.
3. The bot should pick up this block and travel by ascending the ramp (with an inclination of 20-30 degrees) and placing the block at the specified drop point.

4. Cylinder of diameter 5-10 cm will be placed at pickup zone 2. The entry and exit to this second zone will have a revolving door moving at a fixed speed. Touching the door will lead to restart of stage 2 from the checkpoint. The time will not be paused during the restart.
5. The drop zone for the block has a groove where the cylinder needs to be completely placed.
6. Then, the bot needs to come out of the zig zag area and reach the finish point.
7. The maximum duration for each team will be 8 minutes.
8. The bot should exit the arena to stop the timer in case the given task is completed before 8 minutes.
9. Score will be calculated after the team has completed the event.

## SCORING

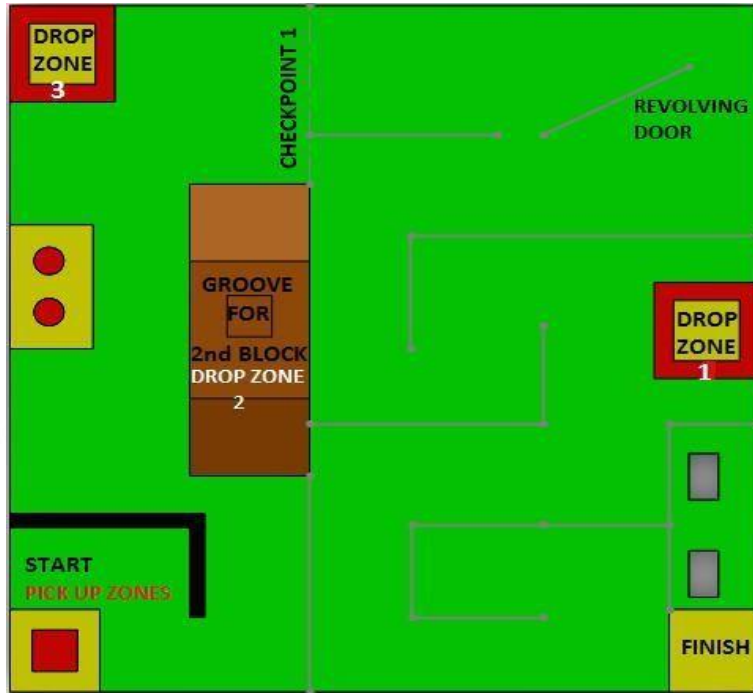
1. 10 points for block correctly placed in drop zone.
2. 20 points if the cylinder is perfectly placed in the groove provided.
3. 5 points if the cylinder is taken to the groove position but not placed properly.
4. -5 if the block is NOT placed in the correct marked area.
5. -5 points if the bot touches the rotating door. DQ if the bot damages the door.
6. -5 points if the bot touches any boundary line of the zig zag path.
7. -20 points if the block or the ball is dragged in the arena.
8. BONUS Points
  - a. 40 points if completed in 0-2 minutes
  - b. 30 points if completed in 2-3 minutes
  - c. 20 points if completed in 3-4 minutes
  - d. 10 points if completed in 4-5 minutes
9. Time of completion will be considered in case two teams have the same score.



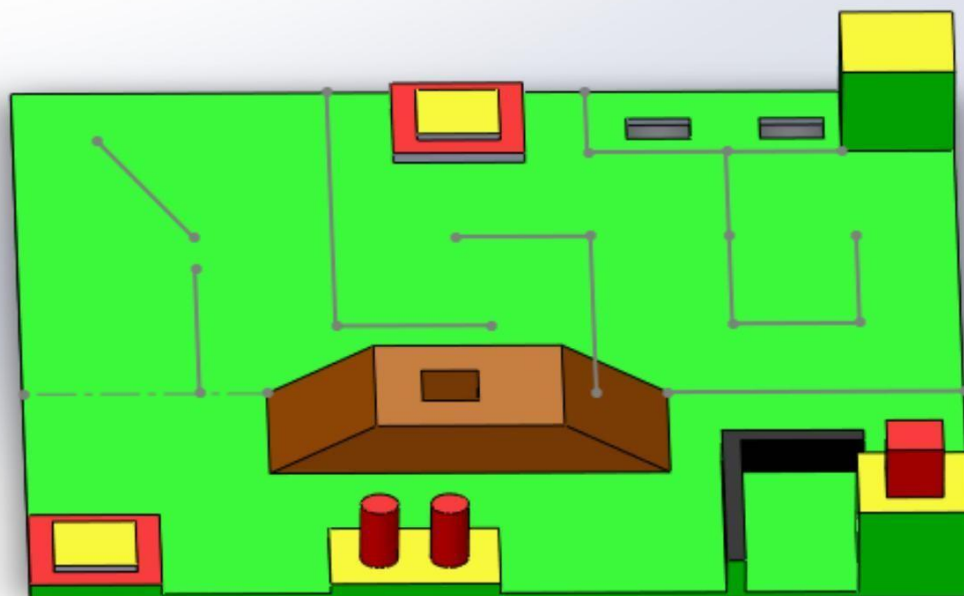
ARENA SIDE VIEW

## ROUND 2:

The objective is to transfer the blocks (arranged in an order) through the arena to their desired locations.



## ARENA FOR ROUND 2



SIDE VIEW

1. The game starts from the zone marked as START.
2. Cubical blocks of dimensions 10cm X 10cmX 10cm will be placed in a set manner at the pick-up zone.
3. Different blocks have different points written on them. The blocks are arranged such that, to achieve higher score the displacement of the bot becomes more.
4. The drop zone for the block with 2<sup>nd</sup> highest points is a groove on the ramp (drop zone 2). The bot is required to place the block into the groove perfectly to fetch points written on the block.
5. The drop zone (drop zone 1) for the block with maximum points is after crossing the revolving door and the block must be carefully placed in the yellow zone only to fetch the points written on the block.
6. The drop zone (drop zone 3) for the block with the least points is after crossing the ramp (which is mandatory) and the block must be carefully placed in the yellow zone only to fetch the points written on the block.
7. After placing all the blocks at their desired location, the bot should move to the finish position to complete the gameplay.
8. The moment the bot crosses the START mark, time will start and will not be paused until the full time gets over.
9. The duration for each team will be 10 min. The bot can gain as many points in this time limit.
10. Scores will be calculated after the team has completed the event.
11. Time of completion will be considered in case two teams have the same score.

## **SCORING**

1. Points written on the box will be awarded for perfectly placing the box at their desired location.
2. 0.5 X (points written on the box) if the block is incorrectly placed at the desired location.
3. -2 X (points written on the box) if the block is dragged.
4. -1 X (points written on the box) if the block/bot goes out of arena.
5. -5 points if the bot touches any boundary line.
6. BONUS POINTS
  - a. Additional Multiplier of 0.25 on each pick and place block point if the score reaches 50
  - b. Additional Multiplier of 0.5 on each pick and place block point if the score reaches 100
  - c. Additional Multiplier of 1 on each pick and place block point if the score reaches 200
  - d. Additional Multiplier of 1.5 on each pick and place block point if the score reaches 300

### **ROBOT SPECIFICATION:**

1. Bot should fit in a box of **30cm\*30cm\*30cm** at start of the event and should weigh **less than 4 kg**.
2. The **potential difference between any two points on the bot should not be more than 24V**.
3. The bot can be wired or wireless.
4. In case of wired bot, the wire used to power/feed the bot should remain slack at all times
5. The bot cannot be constructed using readymade Lego kits or any readymade mechanism. Readymade gear assemblies and readymade wireless modules can be used.
6. Hydraulic/Pneumatic /Cutter/Projectile/Entanglement etc mechanisms are NOT allowed.
7. The bot will be inspected before the event. Failing the inspection shall lead to disqualification.

### **TEAM RULES:**

1. A maximum of **five** participants are allowed per team.
2. Students from different colleges can be a part of same team.
3. Only one person from the team can control the bot at any time during the whole gameplay of the event.
4. **All students with a valid identity card of their respective educational institutes are eligible to participate.**

### **TECHNICAL DETAILS:**

1. Team members will not be allowed to touch any part of arena, only organizers can handle the arena in any situation; the team will be disqualified whose member is found touching arena.
2. You are not allowed to make any changes to your bot once the game has started.
3. Participants are not allowed to keep anything inside the arena other than the bot. **Power supply must be on board.**
4. The time measured by organizers will be final and used for scoring of the teams. Time measured by participants is not acceptable for scoring.
5. The event will be recorded by an overhead camera provided by the organizers.
6. No damage should be made by the bot to the arena or to the other team's bots during the match in any manner.
7. Organizers decision will be final and binding in case of any dispute.
8. Organizers reserve the right to change any of the above rules they seem to be fit.
9. The arena shown above is a sample of the track and there might be slight changes to it during the actual event. The dimensions in the arena are not to scale.



## CONTACT

Dhairya Jain

9876856111 dhairyajain.pec@gmail.com

Akashdeep Jassal

8437446364 akash.deep.jassal@hotmail.com

