# ROBOCEANA 2017

1. Introduction

Ahoy there! This Year Robo oceana is back with its new problem statement involving skills of robotics and a sport.

2. Arena Description

- The arena is 3m x 3m square pool of water.
- Height of water in the arena is 35 cm.
- There will be a maze as shown in diagram
- There will be three hoops at the end of pool of diameter 10.5, 13.5 and 16cm respectively.
- The hoops will be at a height of 50cm from the water level.
- Light weight plastic ball of diameter 6.5cm will be scattered in the final lane of the maze in the arena.

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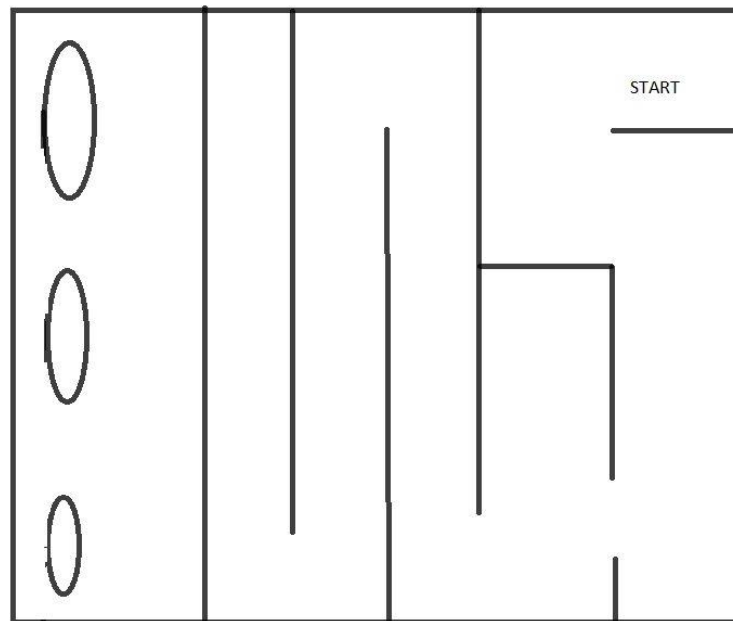
3. Robot Requirements

- Mechanism to collect the ball.

- Mechanism to shoot the ball.
- Dimensions of Robot : 30 cm X 30 cm.

4. Mission:

- Score more points than your opponents in the game to beat him and advance into the next level.

- Each team must navigate the maze to reach the finish lane. The teams will be awarded points on basis of time taken to reach the finish position.

- Each team has to pick up and shoot the balls one by one which will be scattered in the final lane of the maze.
- They have to shoot the balls through the hoops to score maximum points.
- After shooting 5 balls through the hoops a bonus ball will be provided at the begin position. The team can return through maze and collect ball and shoot for bonus points.
- A time/point penalty will be applied if the team requests removal of ball from bot or lane.
- The team can use two chances to push the bot within 5 seconds by hand to free it if it is stuck at a tricky corner after which a time penalty will be applied.
- The competing team can change angle of shooting at the shooting lane(if the competing bot's shooting mechanism does not have any degrees of freedom for movement) with a point penalty.

- If required, teams can take a reset with a point penalty of 25 points. Once a reset is taken the teams are expected to be ready within the next one minute failing which they will be disqualified. Only one reset is allowed per one team.

- The maximum allowable time for a team is 10 minutes.

- A reset time of 30 seconds for two times is given without penality

5. Scoring criterion:

Pick up ball successfully	5
Pick up ball successfully and shoot unsuccessfully	10
Shoot ball in hoop of radius 16	20
Shoot ball in hoop of radius 13.5	30
Shoot ball in hoop of radius 10.5	40
Pick up bonus ball	70
Shoot bonus ball in any hoop	120
Reaching finish position in 1 minute	100
Reaching finish position under 2minutes	70
Reaching finish position under 3minutes	50
Reaching finish position under 5 minutes	30
Reaching finish position under 7 minutes	20
Reaching finish position under 8 minutes	10

6. Violations:

- Capsizing of Robot will attract point penalty.
- The bot must not cross the final lane of the maze.
- Damage to arena will result in disqualification.

7.Rules and Regulations

- Only one member is allowed to control the robot. A total of two members per team can be allowed near the arena.
- A robot cannot split into two or more subparts. Subpart implies a robot which has a drive mechanism of its own.

- The competing teams are not allowed to use pneumatics or hydraulics for the shooting mechanism.
- The operator is allowed to lift the robot only at the starting position or on request for a reset.
- The wire of the controller should always be slack .Controlling the robot by pulling the wire will lead to disqualification.
- Damage to the arena is unacceptable and will lead to instant disqualification.
- Coordinators have all rights to ask the teams to produce the additional explanations on design issues. Also the referees can ask for additional explanation on the safety of the bots if required anytime during the event.
- The design of the maze can be subject to change at the organizers discretion.
- The success of picking of ball by bot will be decided by the organizers and their decision is final.
- The decision of the organizers is final and binding.

8.**FAQ:**
- *What will be the size of the team?*
  Ans: The maximum size of the team is restricted to $(4-5)$ members
- *Do all the team mates need to be from the same college?*
  Ans: NO, the team members can be from different colleges
- *Is there any deadline for registration submissions?*
  Ans: Registration ends on   Links are provided in the webpage. We cannot guarantee on the spot registrations. On spot registrations will be open only for limited number of teams.
- *I am a student from a different stream and have no prior robotics experience. Can I participate?*
  Ans: Yes, you can

Contact Us:
For any further clarifications please feel free to contact us.
For any queries, please do forward a mail to

Core:
Tony - 09791483921
Coordinators:
Ashish Maknikar-7690985820
Aditi Khandare -9940329453
Ratna -9940123092