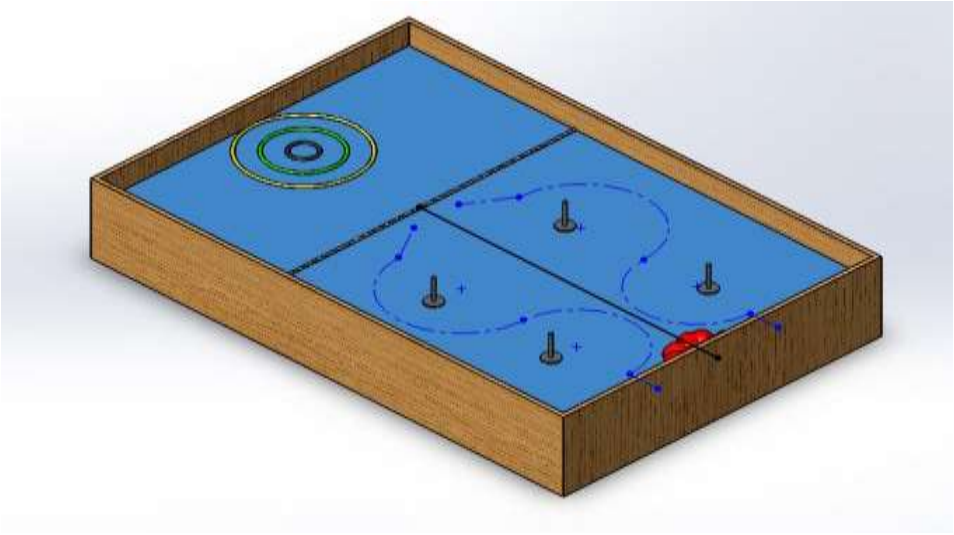
ROBOCEANA 2016

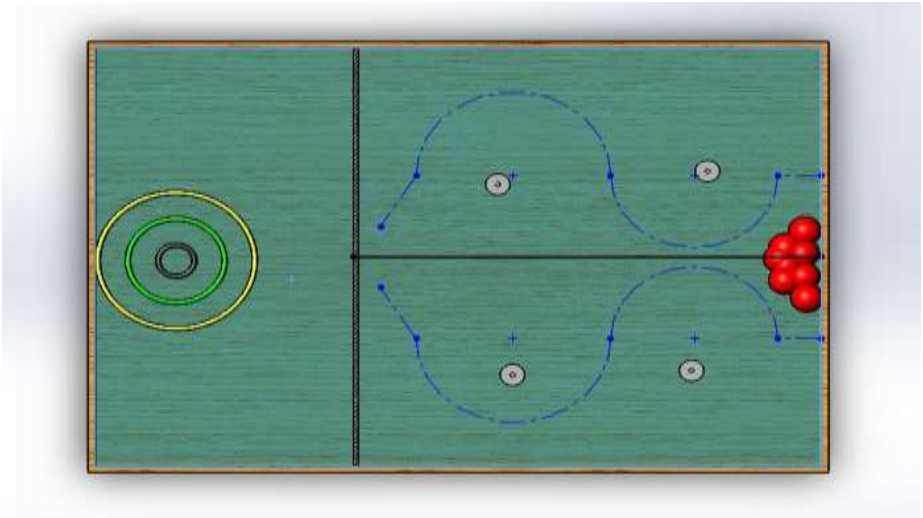
1. Introduction:

This year Roboceana is back with its new problem statement involving skills of robotics and a sport.

2. Arena Description:



3 D view of the arena



Top View of the arena

- The arena is 3m x 2m pool of water.
- Height of water in the arena is 35 cm and height of arena is 50 cm.
- Three loops of different dimensions will be kept at one end (concentric).
- 10 light weight plastic balls of approximately 10cm diameter dimension will be placed in the arena.

3. Robot Requirements:

- Mechanism to pick up the ball.
- Mechanism to throw the ball.
- Dimensions of Robot: 30 cm X 30 cm.

4. Mission:

- Score as many points as possible to stay on top and qualify to the next round.
- In the first round, two teams compete at a time.
- Time duration is twenty minutes.
- 10 balls will be kept at the starting point (the faster bot may use greater percentage of balls). Each team has to pick the ball and cross the flag posts in a zig-zag manner. The faster one completes this task, the greater will be the time available to throw the balls.
- A line will be marked in front of the largest loop at a distance of 75 cm. Bots are not allowed to cross that line.
- The bot has to throw ball into any of the loops from the marked line.
- The bot has to return back again in the same path to reach the pickup point for the balls.
- Different loops have different dimensions and therefore more points will be awarded for throws that fall into loops of smaller dimensions (difficult to get into).
- 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.
- Points will be awarded only if ball falls in the loops.

- The leading point scorer wins .Now they have a tie to repeat the same process with a new opponent.

5. Scoring criterion:

Task	Points
If the bot picks the ball successfully	10
If the bot passes through the flag posts with the ball	50
If the bot touches flagpoles	-15 (each time)
If the bot returns in the path without touching the flag posts	25
If the bot throws in Bigger loop (60cm dia.)	25
If the bot throws in Medium loop (40cm dia.)	50
If the bot throws in Smaller loop (20cm dia.)	100
Reset	-25

6. Violations:

- The robot can't get closer than 10 cm to the line demarcating the loops from the rest of the pool.
- Capsizing of Robot will attract point penalty.

7. Rules & 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 operator is allowed to touch the robot only during a retry and before the match starts.
- 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 decision of the coordinators is final and binding.

8. FAQ:

- *What will be the size of the team?*
  Ans: The maximum size of the team is restricted to 6 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 1st Mar 2016, 5 PM. 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.

9. References:

- https://www.youtube.com/watch?v=k4U91rmto2M

Register at: http://wavez.org.in/
Mail us at: events@wavez.org.in

Contact Us:
For any further clarifications please feel free to contact us.
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