ARM OF ACHELOUS

Problem Statement :

To build a Robot that can lift a given load using a Hydraulic arm.

Robot specifications :

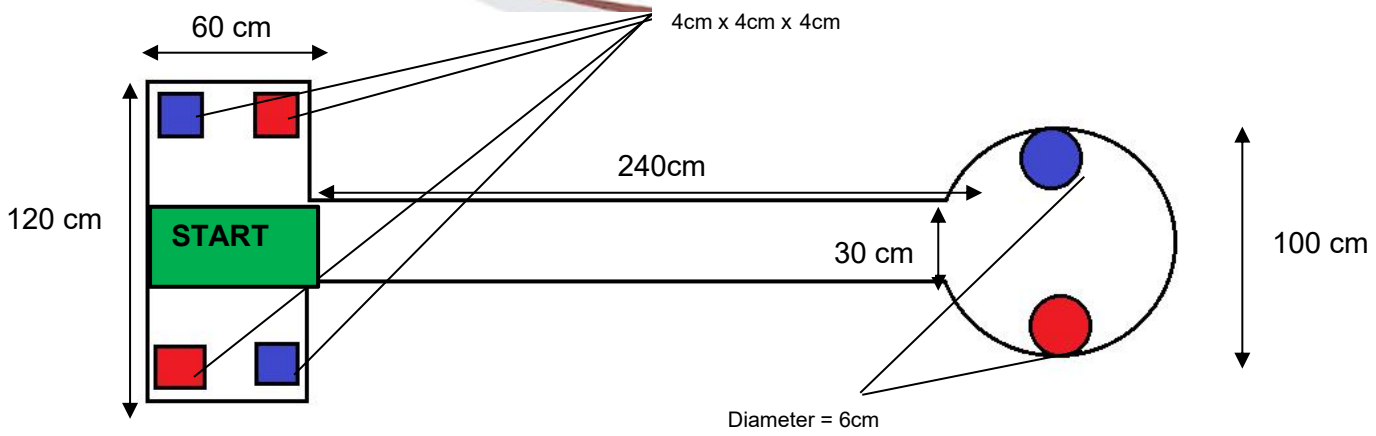
- Participants have to bring a Robot that can lift a given load using a hydraulic arm.
- The locomotive part of the robot must be electrically powered.
- The controller can be either wired or wireless.

Round 1 (Challenge Your Arm):

1. There will be four cups sitting upside down and one ball.
2. Teams have to pick the cups and stack them in a particular order (order will be told to the teams during the game).
3. After stacking, teams have to put the ball inside the topmost cup in the stack.
4. Locomotion of bot is not allowed in this round.
5. Maximum time given will be 90 seconds.
6. Teams which perform this in minimum time will be qualified to the next round.
7. Top 24 teams will be selected for the next round.

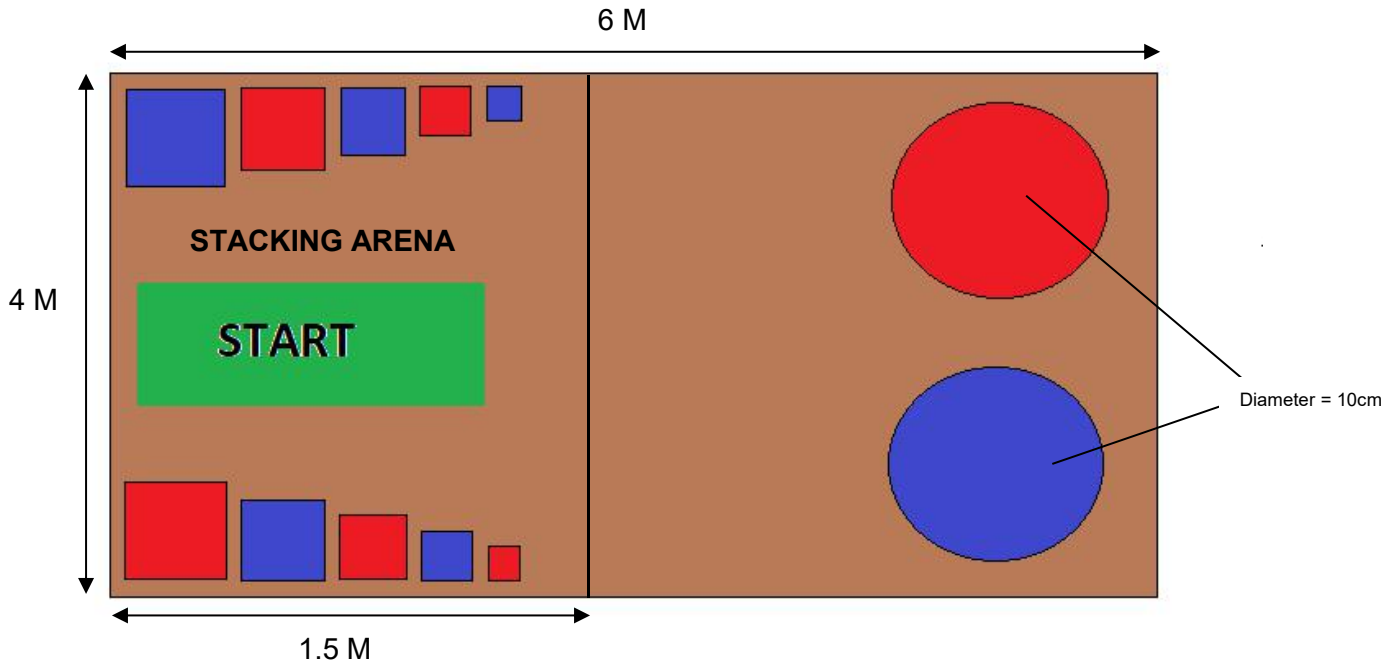
Round 2 (Stability Challenge):

1. The bot will be placed in the start region.
2. The bot must start from there and take the cube to the circle at other end and place there in the cup of respective color.
3. Within 2 minutes the bot needs to place as many cubes as it can.
4. For the first cube, the team will get 150 points.
5. For each cube stacked, the team will be given 150+(n-1)*75 points.
6. If the cube falls off or bot falls off the arena then the team again will have to start from starting position and the cube will also be placed in its original position.
7. After 2 minutes, the bot must stop and the team will be awarded additional n*75 points, where n represents number of rounds of the 240cm track completed by the bot (incomplete rounds will not be counted).
8. Top 10 teams will be selected for the next round.



Final Round (Stacking Challenge) :

1. In this round, the teams have to stack the cubes of same color one upon other in the stacking arena itself and then drop the stack onto the circle of respective color.
2. The cubes used in this game have edges 6cm, 5cm, 4cm, 3cm and 2cm.



3. There will be time limit for this round of 12 minutes.
4. If the stack falls in between the game then the team will again have to start from “START”.
5. Top 3 teams completing the round in minimum time will be declared as the winners.

EVENT RULES :

1. All participants are required to report 15 min before their allotted slot to the reporting desk, being late will be subjected to disqualification.
2. Any misbehavior of participant during the event may lead to disqualification.
3. Should not disturb the other participants during the event, this would lead to disqualification.

GENERAL RULES :

1. Every team has to register online on the official Kshitij website for the competition.
2. A Team ID will be allocated to the team on registration which shall be used for future references.
3. LEGO kits or its spare parts or pre-made mechanical parts are not allowed.
4. A team can register at any point of time before and can submit final abstract(as mentioned in the structure).
5. The decision of the organizers or judges shall be treated as final and binding on all.
6. No responsibility will be held by Kshitij, IIT Kharagpur for any late, lost or misdirected entries.
7. Note that at any point in time the latest information will be that which is on the website. However, registered participants will be informed through mail about any changes.

Team:

1) Participating team size should be limited to a maximum of 4 individuals.

2) The students must carry valid student ID cards of their college which they will be required to produce at the time of registration.

3) Students from different institutes can be a part of the same team.

Note

Participants can get a tutorial by clicking here.