

PROBLEM STATEMENT: Catch me, if you can.

TASK:

In reference to the “Arduino Workshop” held in past(28th Aug.- 2nd oct). Teams have to build a wireless robot which can run in every possible direction. There won't be any broken path. Two robot will compete with each other to gain higher points. One robot has to chase second robot while moving in clockwise direction, second robot has to chase first robot moving in counter-clockwise. Team with higher scores, “wins”.

Here is a short glimpse of similar event:

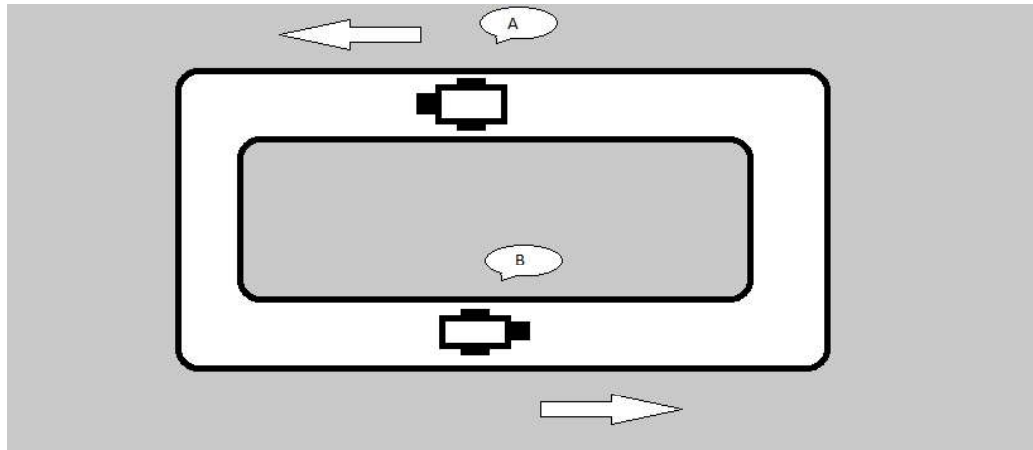
<https://www.facebook.com/Titiksha.smvdu/videos/1815236398697926>

ARENA:

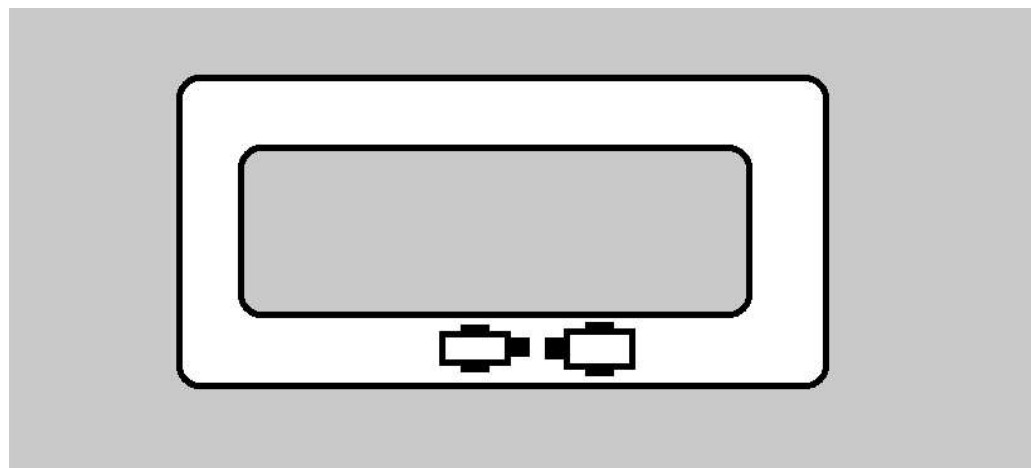
The game field consists of an arena having dimensions 2310 mm X 2310 mm (lxb). It consists of the following:

1. The track is supposed to be oval in shape.
2. Bots are free to move from shortcut, there will be shortcuts in path.
3. Actual path will be somehow different.

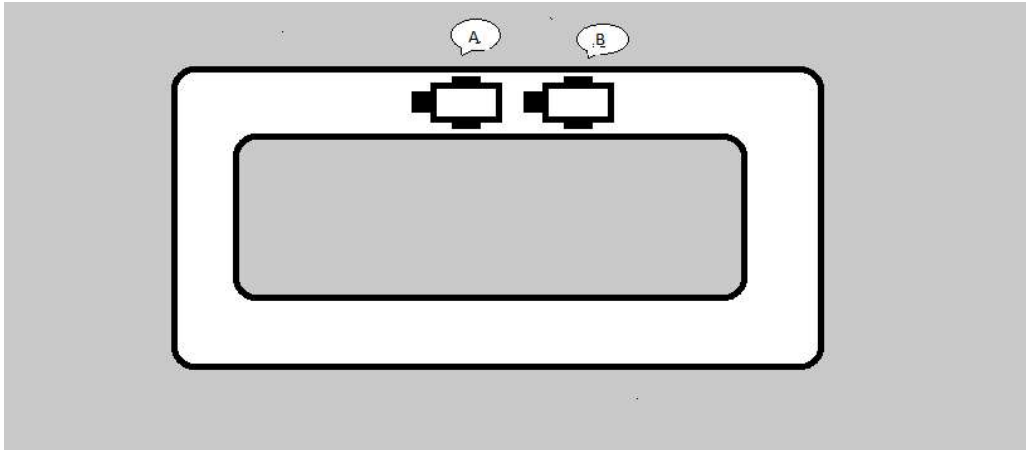
Note: The dimensions of the arena will be accurate to within 5% or 20 mm, whichever is less.



Two bots starts from anti-parallel direction to hit each other.



Head to head collision lead to inconclusive descion, no winner.



B hits A from behind, B wins the game.

*images are for illustrative purpose only, however actual track will be 'tougher'.

GAME PLAY:

1. The two bot musts start from the 'Start Zone'. There will be two start zones.
2. A total of 2 minutes will be given to establish wireless and power supply connections.
3. Timer will start as soon as both teams are ready.
4. During the game play, bot has to hit other bot from behind(only way to win), head-to-head collision will lead to inconclusive descion i.e tie.
5. Number of times bot hit the track,multiplied by 3 seconds is added to individual game time.
6. During the gameplay, timer will not stop in any case, connection error or anyother issue is to be look in before the start of race.

BOT SPECIFICATIONS:

1. The bot must fit into the box of dimension 220 mm X 220 mm X 220 mm (l x b x h).
2. Bot must be operated by one controller only. However a team may change the game player.
3. Bot must have a red LED which will glow once it hit the other bot.(applicable only if bot wins)
4. During the run, the bot must not damage the arena in any way. It is not allowed to leave anything behind or make any marks while traversing the arena. Any bot found damaging the arena will be immediately disqualified. The final decision is at the discretion of the organizers.
5. Bot must have on board power supply.

Note: In case you don't have battery operated bot, do inform organisers or bring your multi port extension cable.

6. When using the electric power supply, the potential difference between any 2 points must not exceed 24 V at any point of time during the game.
7. The bot should not separate or split into two or more units. All bots/units which are touching each other or are in the starting point will be considered as one bot.

GAME RULES:

1. The teams will have to submit their bot before the start of the competition. Only those teams which submit their bots will be allowed to participate. The bot will be handed back to the team during the time of their run. They will be given sufficient time for calibration. If any team is found to alter its code after depositing its bots, then it will be immediately disqualified from the competition. They are however allowed to make any other hardware changes.
2. Only one bot per team is allowed.
3. When the bot starts, no team member is allowed to touch the bot or enter the arena.
4. At the start of the task, the bot will be placed at the starting point. Only 1 team member is allowed to be near the game field while starting the bot.
5. Run will start only when organizers give the signal.
6. The starting procedure of the bot should be simple and should not involve giving bot any manual force or impulse in any direction.
7. The timer will not be set back to zero and will not be paused.
8. Bot shouldn't exceed power supply of (12V, 2200mah) battery or adapter operated.

GENERAL RULES:

1. Only 1 member of the team is allowed to handle the bot.
2. Participants are not allowed to keep anything inside the arena other than the bot.
3. The time measured by the organizers will be final and will be used for scoring the teams.
4. Time measured by any contestant by any other means is not acceptable for scoring.
5. In case of any disputes / discrepancies, the organizers' decision will be final and binding.
6. The organizers reserve the rights to change any or all of the above rules as they deem fit. Change in rules, if any will be highlighted on the website and notified to the registered teams.
7. Only one team is allowed to be present during the run.
8. A team must of maximum 3 members. However use of same robots by more than one team is allowed , only by mutual agreement between teams.
9. If any constestant registered in more than one teams, will lead clearshot disqualification of both teams.

JUDGING:

1. 50 points will be provided if the bot beats the opponent.
2. 25 points will be awarded if the bot glows the LED after winning
3. 10 point will be provided to defeated team.

SCORING:

1. A = 50 points , if team wins. 10 points, if team lose.
2. B = 25 points if the bot glows the LED after winning.
3. C = Total gameplay time taken in seconds - $3 \times \text{number of hits with track}$
4. Total = A + B + C

TEAM SPECIFICATIONS:

A team may consist of a maximum of 3 participants. Students from different educational institutes can form a team. However use of same robots by more than one team is allowed , only by mutual agreement between teams.

CERTIFICATE POLICY:

The top three will get cash prize worth more than Rs 1000.

3rd prize = Rs 500,

2nd prize = Rs 1000,

1st Prize = Rs 1500.

CERTIFICATE OF PARTICIPATION:

The participation certificate will be awarded to teams scoring first three highest scorers.

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