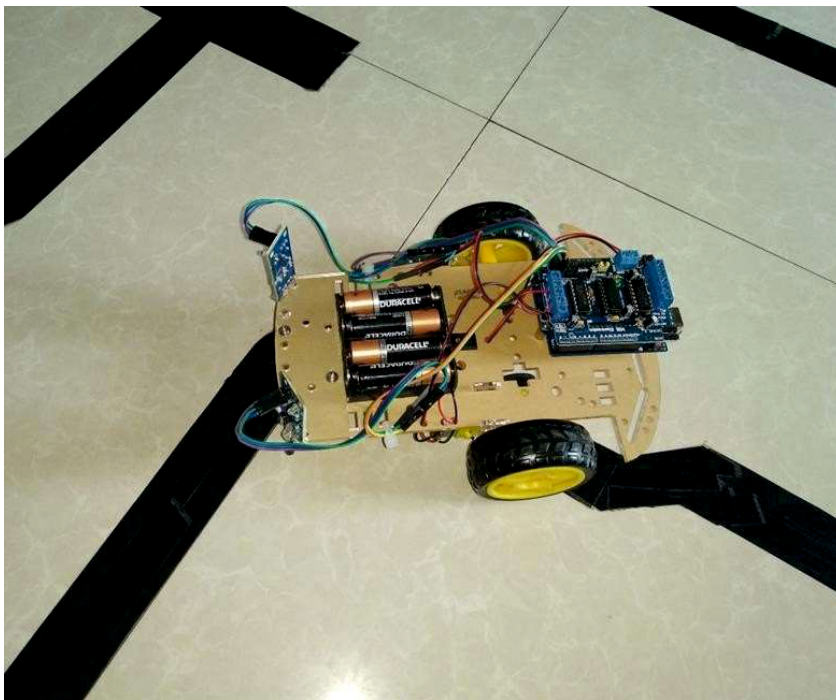


## **ROBOTICS AND ARTIFICIAL INTELLIGENCE FOUNDATION (RAAIF)**

### **FASTEST LINE TRACER – PROBLEM STATEMENT**

#### **Introduction**

*“A line following robot is a type of robot that follows a particular direction or path and maintains its own working nature based on the situation it faces.”*



The line following robot is commonly used for automation process in industries, military applications and consumer applications. In this way, students are being trained for developing innovative ideas for the society and human nature.

#### **Problem statement**

Get ready! Prepare your own robot car robot that follows a particular direction or path and maintains its own working nature and get awarded with points.

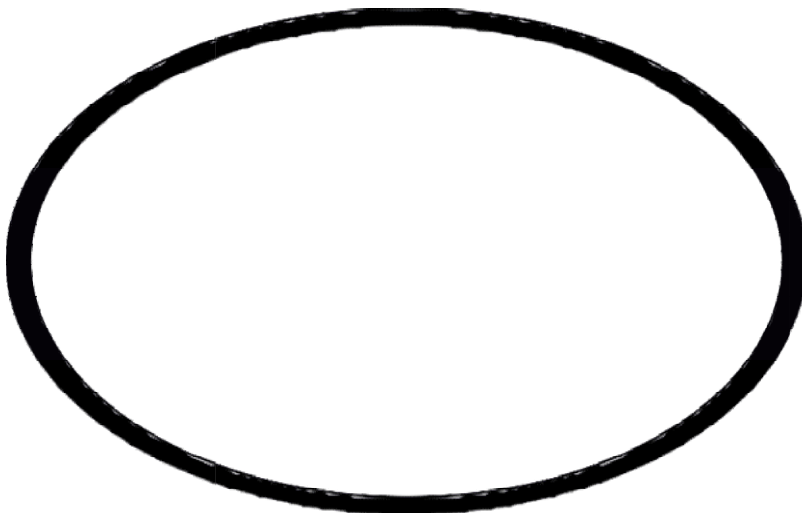
## Event format

- The event consists of 2 rounds.
- Each team must have a robot that follows a particular path like dark surface and take turns in specified direction.
- The robot should follow the rules & not deviate from its path for a successful completion.
- The teams which come out with top cumulative score at the end of the round1 will be selected for the final round.
- The teams which are selected for the final round will be tested in the knowledge on their robot configurations & accuracy.

## ROUND1:

- The arena for the round 1 will be a simple circular pathway.
- The robot must travel in the circular pathway without deviating from its pathway.
- The teams must have their bot with proper battery conditions.
- Minus points will be given for adjusting the robot / repairing the robot on the arena.
- Teams with lesser penalty and minimal time will be qualified to the finals.
- No trial rounds will be given inside the arena.

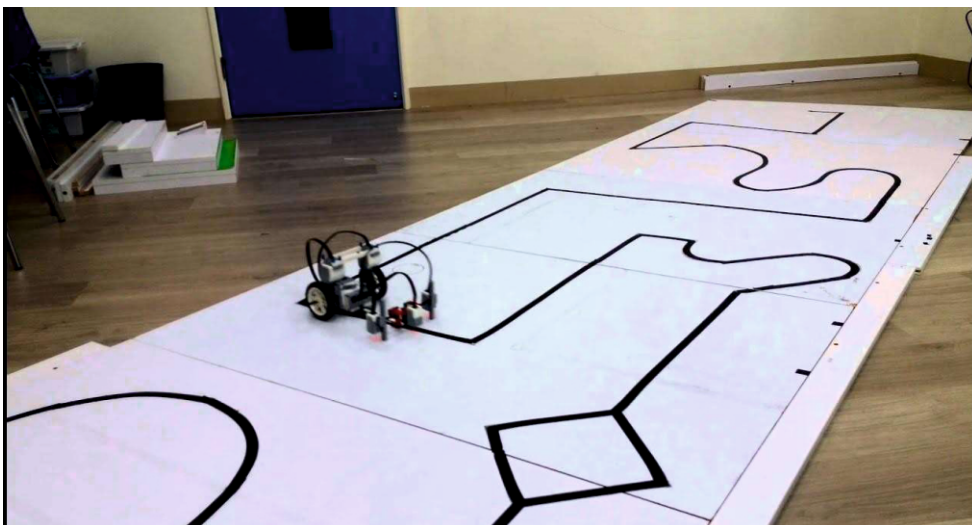
## Schematic Arena



## ROUND 2:

- Round 2 will be the final round.
- This will be one-on-one round.
- The selected 2 teams are required to complete the task.
- The track will contain intersections and direction changing pathway.
- The robots will be allowed to start from a starting point and cross intersections and take turns according to the given instructions.
- The robot should not deviate from its path or cross lines inside the arena in any wrong direction.
- The robot must be within 1kg of weight and the speed of the moving bot must be decided accordingly with more accuracy in turnings.
- No trial round will be given inside the arena.
- The bot which finishes the track with minimal time and reaches the finishing point first by following the rules will be **“The winner.”**

## Schematic Arena



## Rules and specification

- Robot should not deviate from its path.
- The team should have 4 members. Students should have a valid school ID card.
- The battery should be on board the bot.
- The dimensions of the Robot must be 20x20x20cm. The weight of the robot and battery combined should not exceed 1kg.
- The competition will be one on one round where 2 team will compete in same time.
- There will be starting and ending points for the competition, no obstacles in between.
- Robot should travel only on the pathway given, if it deviates from its path, penalty would be given for that team.
- Each team will be given a single chance for their bot.
- The voltage at any point on the bot should not exceed 12v DC.
- Unfair game may lead to disqualification of the team.
- Register your team's name to the organizer committee.
- A team should have a leader or a spokes person to interact with media, RAAIF and other audience.
- Judges and Organizers decisions are final.