

TECH ZEALOT 2K11

PRESENTS

PROPHET

**LINE TRACER
ROBO**

TRACE ME

**SEPTEMBER
11TH AT 27TH**

SSGBCOET, BHUSAWAL

“Drivers not required.”

Entry Fees: Rs: 200/-

Prize Amount: Rs 2100/- for winners and Rs 1500 for runner up.

Last Date of Entry is: 27 Sep 2011& On Spot Entries can be depends on techzealot committee decision.

Robotracer:

❖ Introduction :

Robotrace is a competition in which robots run in a specified oval course to determine which is the fastest. Robots that enter robotrace races are called "robotracers".

❖ Problem Statement :

Build a Robotracer (line follower robot) that traverses the race track in the least possible time...

❖ Rules for Robotracer :

- ✚ Each team is allowed to have only one bot. But team may reregister again only in elimination round if they are not able to qualify for the next round...
- ✚ Robotracers must be self-sustained, and not externally operated, by wire or by radio.
- ✚ No addition, removal, replacement or change shall be made to the hardware or software of a robotracer by the operator during a contest. It is however permissible to make minor repairs.
- ✚ A Robotracer shall not exceed 25 cm in overall length, 25 cm in overall width and 20cm in overall height.
- ✚ A robotracer must not be provided with a suction mechanism for increasing the ground contact force.
- ✚ A robotracer cannot be constructed using readymade Lego kits or any readymade mechanism. But you can make use of readymade gear assemblies, motherboards, sensors. Violating this clause will lead to the disqualification of the machine.

❖ Arena Details:

- ✚ The competition platform has been designed with a white line on a black surface.
- ✚ The line width is 30 ± 2 mm.
- ✚ There will be two identical course so two teams can compete head to head.
- Track may contain the following elements :
 - ✚ Straight stretches
 - ✚ Circular stretches
 - ✚ Radial turns
 - ✚ S-shaped bends
 - ✚ Ramps (max inclination 25deg)
 - ✚ The line may intersect itself.
 - ✚ Tight turns.
 - ✚ Bridge/tunnel crossing.
- There will be two arenas onsite, one prime run arena and one calibrating arena.
- A version of the prime arena will also be setup the day before the event for test runs. The robotracer must deal with the lighting conditions as they appear. That is, room lighting and window drapes will be set as desired by the judges and will not be modified for individual contestants.
- Arena will be reviled on the day of event.

❖ Race Operations:

Pre-Game Setup

All robots must be ready to run at the start of the contest. The order of running will be randomly assigned. Before the contest starts, all contestants are invited to examine the course. Any issues the contestants have with the course (smudges, uneven surfaces, etc.) must be brought to the attention of the judges at this time.

Each team will be allowed a slot of 15 mins to calibrate their machines on a test track. Just before the run, teams will get a chance to test their machines in the same lighting conditions at a smaller test track besides the main track.

Game Procedure

There will be 2 rounds. An elimination round and a final round.

Elimination Round

- ✚ A robotracer shall run along a line such that the projection of the main body of the robotracer onto the floor surface is always on the line indicating the course. The condition in which the main body of a robotracer completely deviates from the line while it is running is deemed to constitute the robotracer having gone off the course.
- ✚ Each robotracer shall be provided with three minutes, and may run any number of times within this time limit.
- ✚ Goal of elimination round is to reach checkpoint 2.
- ✚ Robotracers shall start within the defined start-goal area, and shall go in the specified direction.
- ✚ The shortest time of the time required for a robotracer to reach checkpoint 2 shall be recorded as the time for the robotracer.
- ✚ The contestant starts a match by pressing a start button. Timing of the run will begin when the robotracer crosses the "START" line.
- ✚ Once a match has started, no contestant or official may touch the track or interfere with the robots in any way except to reset a robot as stated below. Resets are granted only by the race official.
- ✚ If time permits, after all robots have made one run, robots may make a second run. The score for each robotracer will be the better of its two scores. No robot modifications are permitted between runs!
- ✚ In case robotracer do not reach Checkpoint 2 then distance at end of 3minutes will also be considered.
- ✚ The eliminations will continue till the top 16 entries are selected. Based on time taken to reach checkpoint 2.

Reset

- ✚ Each team will be allowed any number of resets to the path of their robotracer, if the robotracer does not cross any section of the track after diverting and does not bump into any other bot.
- ✚ The robotracer must be lifted and placed at the last checkpoint on the track from where it had diverted.
- ✚ In case a robotracer runs haywire and bumps into another bot by going off the track or skips a portion of the track, then the robotracer will be disqualified and the entire run.
- ✚ Resetting a robotracer onto the course incurs a 5-second penalty.

Final Round

- This round is a simple time trial between the finalists.
 - ✚ A fixed number of the entries remaining will then perform time trials.
 - ✚ The top three in the time trials will be declared as winners.
 - ✚ Pairs will be made on random basis.
 - ✚ Final round will be a knock out round between two teams.
 - ✚ Winner team will proceed to next level.

Round Rules

- ✚ Any numbers of restarts are allowed per bot.
- ✚ No re-orientation is permitted during the run.
- ✚ The robotracer must clear all checkpoints.
- ✚ Restart should be from last checkpoint crossed.
- ✚ Robotracer which reach finish line first is winner.
- ✚ In case both robot do not reach finish line then robotracer farthest at the end of three minute will be considered winner. If at the end both robotracers are at same point then. Number of restarts will be considered.

General Rules

- Organizers will be not responsible for any minor scratches left by the previous machines on the arena.
 - ✚ Any team that is not ready at the time specified will be removed from the competition automatically.
 - ✚ The robotracer would be checked for their safety before the run and would be discarded if found unsafe for other participants and spectators.
 - ✚ Any robotracer which damages the arena will be disqualified.
 - ✚ Participants should not dismantle their robots before the completion of the whole competition as the robotracer might need to be verified by the judges at a later stage to ensure that the participants have not violated any of the rules.
 - ✚ Judges' decision shall be treated as final and binding on all.
 - ✚ The organizers reserve the right 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 participants.

Disqualifications and Penalties

- ✚ Any robotracer not conforming to the specifications provided will be instantly disqualified.

- ✚ Any robotracer which damages the arena will be disqualified.
- ✚ Any robotracer which runs haywire during a run and bumps into another bot will be disqualified.

Ties

- In case of ties there will be a rerun between the robotracer. This will last for 2 mins.

Team Specification

- A team may consist of a maximum of 4 members. Students from different educational institutes can form a team.

Eligibility

- All students with a valid identity card of their respective educational institutes are eligible to participate

Certificate Policy

- ✚ Certificate of Excellence will be awarded to all winners.
- ✚ Certificates of Participation will be given to all the participating teams.

FOR ANY QUERY CONTACT:

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