Autonomous robotics

Rules:

Dimension:

Each robot is to be no larger than 25cm length by 20cm width by 15cm height at the start. Although sensor may present outside of the robot body.The robot can weigh no more than 1.5 kg.

Members per team

The number of members is limited to a maximum of four (4). Students from different institutions can also make a team.

Sensors

Any type of sensors may be used.

Power supply

- Power supply must not exceed 12 V (DC or AC).
- If needed, external power supply will be provided

Other Rules:

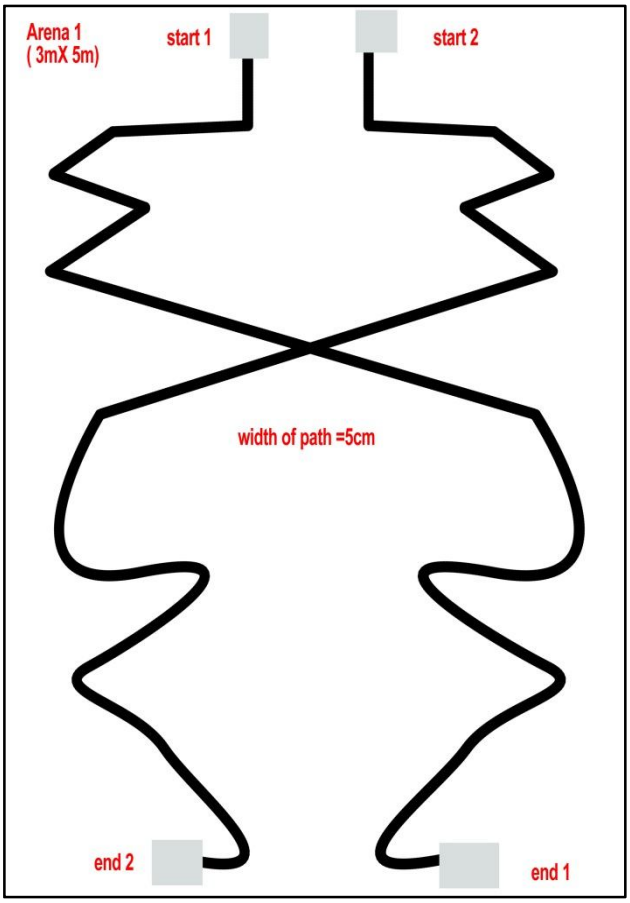
- There will 3 round over the duration of 3 days of techSRIJAN 2012
- Robot once entered the arena, no manual controlling should be done, else negative marks will be awarded.
- All robots will goes through all thethree (3) round. Winner will be decided on the basis cumulative marking of all the rounds.

- The Robot would be checked for their safety before the run and would be discarded if found unsafe for other participants and spectators.
- Any robot which damages the arena will be disqualified.
- Arena will be disclosed on the spot. Trial will be provided, after that 1 hour will be given to carry out any modification.
- 2 time out will be allowed per round.

ARENA

Round 1:

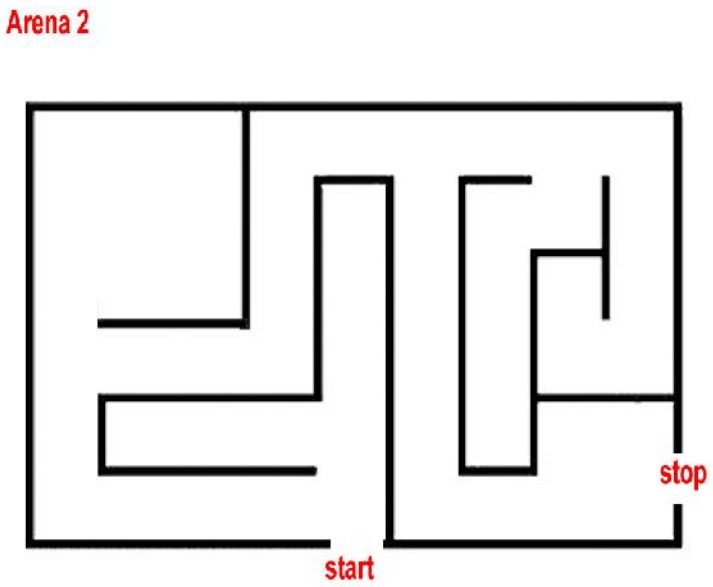
- Robot has to follow a black line track over the white background.
- 2 robots will compete simultaneously in this round. They have to follow their own track.
- Black line track will consist of turns at 90degree, less than and more than 90 degree turn, U turns and curves.
- There will be crossing over of the 2 path. Each Robot has to follow their ownpath, avoiding collision.
- On collision, Robot that hit the other will be awarded negative marks.
- Robots have to complete the track in minimum time.



Round 1 demo arena.(not actual arena)

Round 2:

- Robot has to find its way through a simple maze(may use any type of sensor and algorithm eg. wall following method).
- Maze to be solved in minimum time.
- Hight of the wall would be 12 cm.
- White wall on black background.
- Half arena trial will be provided



demo of arena 2(not actual)

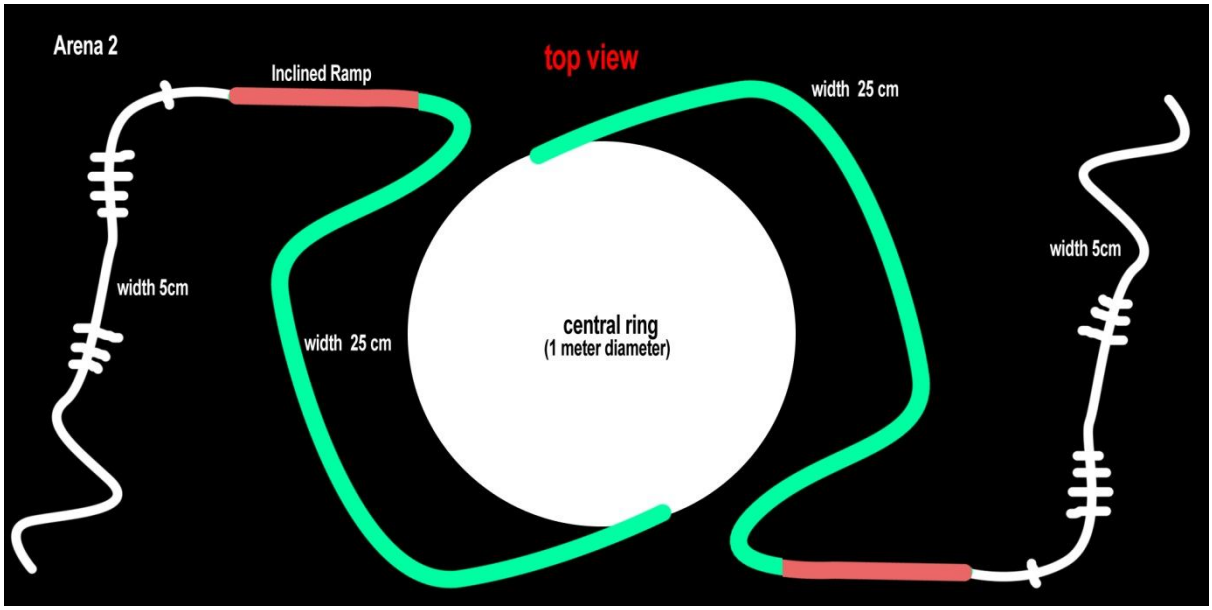
Round 3:

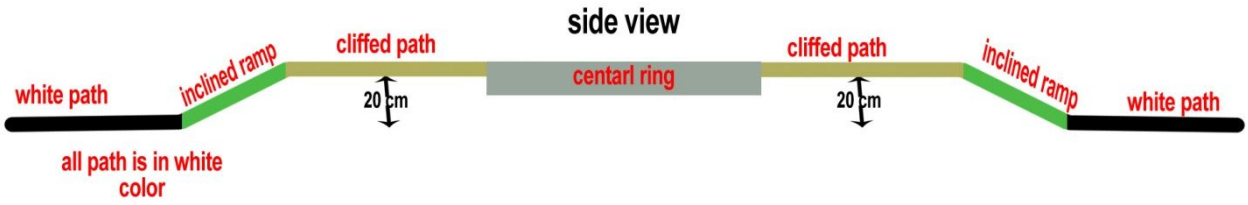
- 2 robots will compete simultaneously
- Arena will have 3 part.
  1st part:
- Robot has to follow white line on black background.
- On proceeding, it will encounter some white strip, which the robot has to count and display on 1 seven segment LED display.
  2nd part
- Robot has to climb up an inclined ramp and make its way through zig-zag path without falling off the cliff, to the central ring.

- Robot which complete the 1st and 2nd part first will be given bonus marks

3rd part

- In central ring will have some moving obstacle which will direct robot to the cliff of the ring.
- Robot has to maintain themselves in central ring, without falling of the ring.
- Robot can try to push other opponent off the ring.
- If one robot fall other will win and marks will be awarded.





(Actual arena 3 diagram)

JUDGEMENT CRITERION

Inspection

1.All robots will be measured, inspected, and weighed to verify qualification.
2.A digital scale will be used for determining mass.
3.The robot will be inspected to be sure it is non-damaging and generally safe.
4.Records will be kept to facilitate dispute resolution and tie breaking.
5.If any unmentioned query occurs ,then the decision will be taken by the refree on the spot.

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