



# INTER SCHOOL ROBOTICS CHALLENGE

**IRC  
2011**  
www.bulo.in/irc  
9818403093

## Problem Statement – Elimination Round

### Problem Statement:

To build a wired robot that can pull/ push a box in across the track.

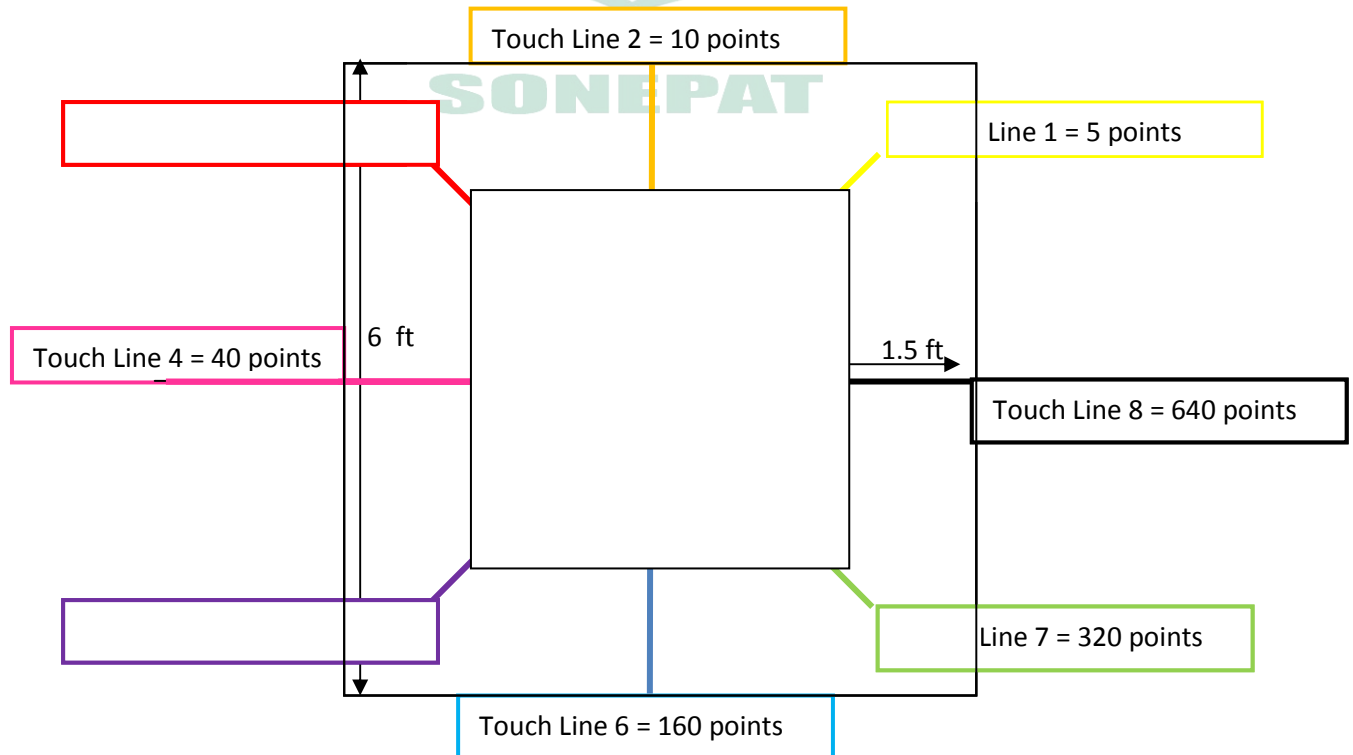
### Problem Description

Participants need to design a robot that can pull/push boxes across the track.

1. The objective of a game is move the box across the maximum distance across the track.
2. The duration of the Arena Run is one minute only. There are no re-runs.
3. The arena consists of a square track with walls.
4. The square track is divided into 8 Touch Lines. Crossing each touch line doubles your score.

### Arena

1. The length of the track is 6 ft.
2. The width of the track is 1.5 ft.
3. The height of the walls is 1 ft.
4. The box is of the size of 6 inch x 6 inch x 6 inch
5. The arena is divided into 8 touch lines at equal distances from each other.
6. The robot will start the race from the Start position at the arena.
7. The arena run will be of 1 minute. The robot needs to cover the maximum distance in one minute.
8. A power source of 12V DC will be provided at the arena through an adaptor.





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## Scoring

1. The timer starts as soon as the judge gives his signal.
2. Each robot gets 1 minute to complete maximum number of laps.
3. On crossing each touch line, the score of the robot doubles.
4. The score for each lap is calculated as follows:

Action	Score Generated
Crossing touch line 1	+5
Crossing touch line 2	Double the score (10)
Crossing touch line 3	Double the score (20)
Crossing touch line 4	Double the score (40)
Crossing touch line 5	Double the score (80)
Crossing touch line 6	Double the score (160)
Crossing touch line 7	Double the score (320)
Crossing touch line 8 (Completing one lap)	Double the score (640)

5. The total score  $S$  for a robot that covers  $N$  laps is calculated with the given formula:  
$$S = \text{Total score of lap1} + \text{Total Score of lap2} + \dots + \text{Total score of lap } N$$
where,  
 $S$  is the total score  
 $N$  is the total number of laps taken by the robot in a minute
6. 5 teams with the highest  $S$  score will move to the final round.
7. In case of a tie, the decision of the judges will be final.

**SONEPAT**