Arena Specifications:
- 8 foot by 8 foot square with surrounding 12 inch walls. The arena floor is painted flat black except as noted below.
- Obstacles are thin, 12 inch high foam board rectangles attached to floor.
- Four arena corner regions, denoted 1, 2, 3, and 4, are starting locations for robots are marked with 1, 2, 3, or 4 parallel white tape stripes.

Robot Goal: The goal of the contest is for each robot to reach the opposite corner of the arena from its start position as quickly as possible.

Starting Positions: Random assignments to different arena corners for each contest.

Game Play Rules
- Every robot will be constructed using the same specifications including front facing laser sensor/control module, and laser module both at uniform height above floor.
- Robots are completely autonomous and cannot be guided or controlled by team members in any way during the contest.
- During each round (except for the final round) four robots compete against each other. The winner and runner-up of each round move to the next level. Assuming eight robots competing, this gives two first rounds, one semi-final round and one final round of only two robots.
- Robots colliding with one another or obstacles are physically returned to their starting places.
- Robots that become unresponsive or violate rules on laser firing or hits are considered disqualified and removed from the arena.
- Robots can affect (temporary or permanently) other robots through laser fire.
- One laser fire lasts exactly 0.5 second followed by a 4.5 second recharge interval.
- There are at most 120 individual laser firings in 10 minutes.
- A robot hit by laser fire is required to perform a 180 degree turn away from its current direction of travel. The robot will ignore laser hits while turning.
- All robots must carry an LED indicator array to show how many laser hits have been recorded.
- Any laser strike on the laser sensor counts as a hit and must be recorded and displayed by the robot hit.
- Any robot hit 8 or more times by laser fire is considered permanently disabled and removed from the arena.
- All the judge’s decisions are final.

Scoring: The robot which first reaches its opposite corner goal is declared the winner of the round. The next robot to reach its goal is the runner up. If no robot reaches its goal within ten minutes, all robots are stopped and the two closest to their goals by straight line measurement are declared winners of the round.
Robot Components

- Arduino Uno or equivalent
- Arduino Proto-shield kit with LM 7805 voltage regulator
- 5 volt laser module
- Laser detection/control module and two piece mounting plates
- Parallax BOE-Bot kit including base, servo motors, standoffs, etc.
- LiPo 11.1 volt battery with barrel connector
- Two Parallax QTI Sensors with extension cables
- Small RC servo
- Sharp GP2Y0A02 IR sensor
- LED display for hits received
- Jumpers, connectors, etc as needed

Contest Area Layout: Starting position of robots shown. Obstacles are black. Not to scale.