TRACK-O-BOT

Introduction:

Autonomous bots require to perform many interesting and complex things and in places where normal human exploration is limited or impossible. However, the most basic requirement for any autonomous robot is to navigate properly and reach its destination. In this event your bot will be tested to do just that, to navigate through a city plan containing crossings, dead end at walls and barriers.

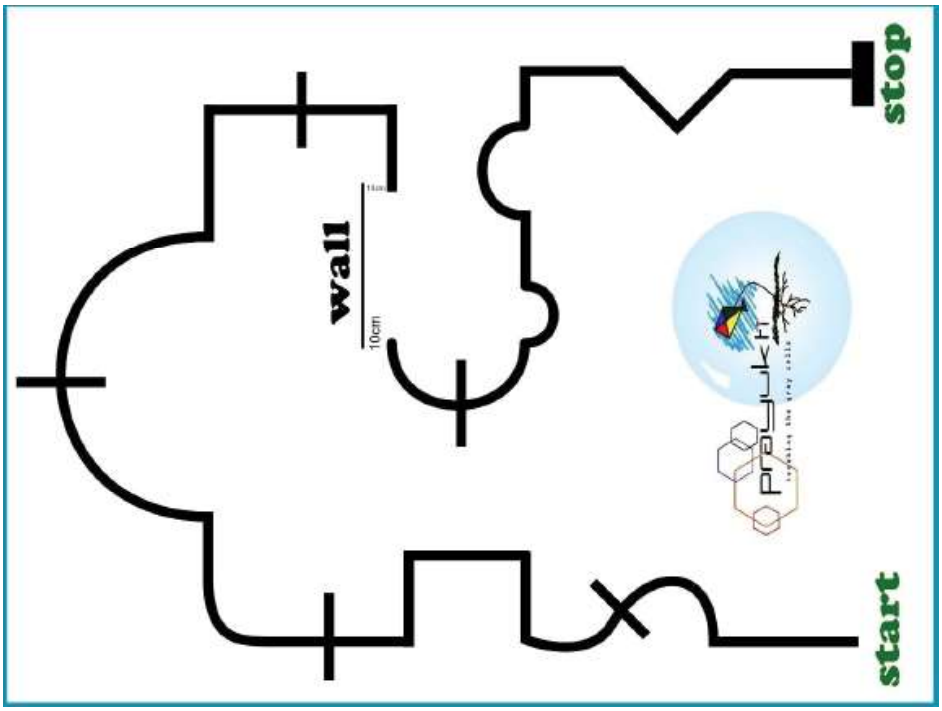
Objective:

The robot has to follow a black line over a white background as well as a white line over a black background or both and successfully reach the finishing point from the starting point without being manually controlled by any person. The entire path of the robot consists of walls and obstacles. Depending on the level or round, the robot may have to indicate the walls and obstacles and stopping positions by simply glowing different LEDs. A robot failing to follow the line, and wandering away or falling off the board in any of the rounds will have to start from the last detected checkpoints. Marks will be awarded for successful detection and crossings. Penalties will be imposed for touching the walls and barriers and not stopping in the finishing point.

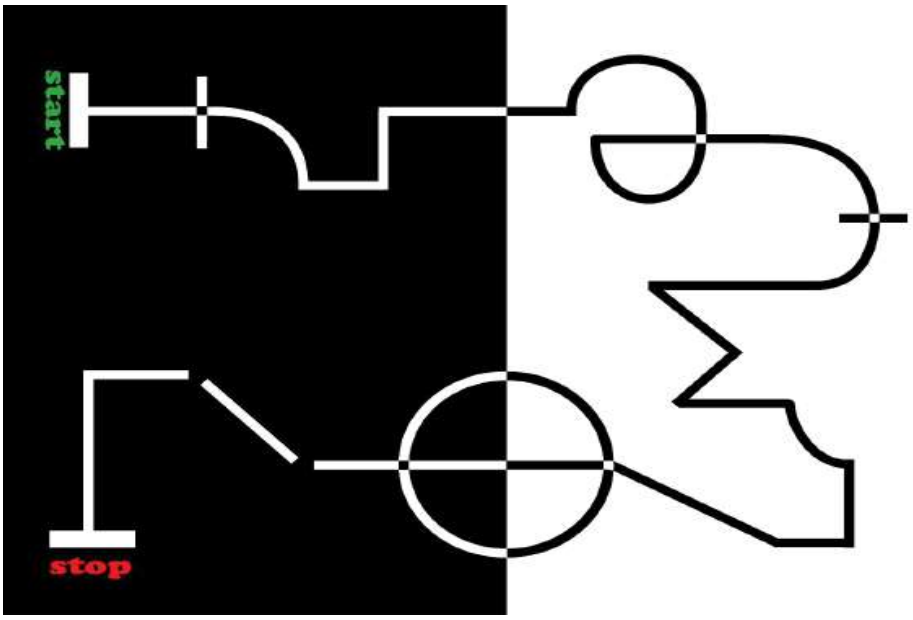
Robot Specification:

- The robot should fit into box of dimension 25cm X 25cm X 25cm.
- The dimensions may however exceed after the beginning of the run.
- The Bot must be fully autonomous, i.e. No manual intervention is allowed once the run is started.
- LEGO kits or its spare parts or premade mechanical parts are not allowed.
- Readymade gearboxes, sensors, metal detectors, development boards can be used but no other part of the robot should contain any readymade components.

Arena for 1st Round



Arena for 2nd Round:



Arena for 3rd Round:

Round 3 arena will be revealed on the spot (Hint: maze solver)