

robotex

International

MAZE RULES

COORDINATOR FOR THIS COMPETITION

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1 Introduction

Robotex International Maze rules were adapted from the 1986 Official Rules for North American Robot Contests. Rules have been modified to meet modern technical capabilities.

2 Objective

In this competition, the mission of the autonomous robot is to negotiate a maze from specified corner to its centre in the shortest possible time.

3 Contest eligibility

1. Both an individual and a team can register for the maze solving competition.
2. A team may consist of up to five people.

4 Rules for the Robot

1. The robot must be autonomous (no remote controls allowed).
2. The robot must not leave any part of its body behind whilst solving the maze.
3. The robot is not allowed to jump over, fly over, climb, scratch, cut, burn, mark, damage, or destroy the walls of the maze.
4. The Robot must not be larger, either in length or in width, than 16 centimetres. The dimensions of a robot that changes its parameters during a run cannot expand larger than 16 cm × 16 cm. There are no restrictions on the height of the robot.
5. Any violation of these rules will constitute immediate disqualification.

5 Rules for the maze

1. The maze is composed of 18 cm × 18 cm unit squares and comprises up to 16 × 16 squares. The walls of the maze are 5 cm high and 1.2 cm thick (assume 5 % tolerance). The distance from wall to wall within a square is 16.8 cm. The outside wall encloses the entire maze.
2. The sides of the maze walls are white, the tops of the walls are red, and the floor is black, finished with matt colour.
3. The walls may not be uniformly white, the tops of the walls may not be uniformly red, and the floor may not be uniformly black. Fading can occur, and parts from different mazes may be used. Also, the floor may not provide a consistent level of friction.
4. The start of the maze is located at one of the four corners. The start square is bordered with walls on three sides. The start line is located between the first and the second square. The goal is to reach the target square located in the center of the

maze, which consists of an area made up of four 18 cm x 18 cm squares. The finish line is at the entrance of the target square.

5. There are multiple paths to the target square and are expected of the contestants. The target square has only one entrance and it will be positioned so that a wall-hugging robot will not be able to find it.

6 Rules for the competition

1. Each contesting robot is allocated a total of 5 minutes of access to the final maze. Any time used to adjust a robot between runs is included in the 5 minutes. Each run (from the start cell to the centre zone) in which a robot successfully reaches the target square is given a run time. The minimum run time shall be the official result of the robot. First place goes to the robot with the shortest official time. Second place to the next shortest, and so on. Robots that do not finish the maze will be ranked by how close they got to the destination square.
2. Each run shall be made from the starting square. The operator may abort a run at any time. If an operator touches the robot during a run, it is deemed aborted, and the robot must be removed from the maze. If robot has already crossed the finish line, it may be removed at any time without affecting the time of said run.
3. After the maze is disclosed, the operator cannot feed information of the maze into their robot.
4. The contestants are allowed to:
 - change switch positions;
 - adjust sensors;
 - make repairs in case the robot breaks down.
5. The run timer will start when front edge of the robot crosses the start line and stops when the front edge of the robot crosses the finish line.
6. Referee must be able to add a marker/sticker on top of the robot.

7 Organisation

1. The robot must be registered before the competition. The registration process includes technical inspection of the robot and marking the robot with a number sticker.
2. Technical inspection must be completed by the time that is specified by the organisers.
3. All questions and problems arising during the competition are solved by the referee.

4. The final decision regarding any appeals is made by the referee and/or the organizers. All complaints must be reported to the referee during the match or right after the ending of the match. Complaints filed later will not be accepted. The final decision regarding any disputes or inconsistencies, is always made by the referee.
5. The arena has at parts uneven lighting and infrared noise, which may disrupt the work of sensors during the competition. For this reason, the organizers recommend using covers or blinds for sensors, testing the sensors under intense lighting conditions or even under direct sunlight to imitate the lighting conditions of the competition arena.

8 Changes and cancellations in the rules

Changes and cancellations made to the rules are adopted by the main organiser of the competition, according to the regulations of the regulatory committee of the competition.

