ROBOFINIST

Micromouse Maze

RoboFinist competition rules

Version 1.0 dated May 1, 2024

1. General Provisions

The run is held by each team independently. One team plays one robot.

1.1. Task Description

During one run a robot has to go through the maze from the starting to the finish area in a minimum of time.

1.2. Restrictions

A team must meet the following requirements, unless otherwise specified by the Organizing Committee of a particular Event:

- the number of participants in the team is 2 or less (the number of coaches/team managers is not limited);
- there is no age limits.

2. Requirements for the Robot

The robot must meet the following requirements:

- length - not more than 168 mm;
- width - not more than 168 mm;
- height - not limited;
- weight - not limited.

The robot must be absolutely autonomous.
The robot must not jump, fly, or climb over the walls of the maze.

3. Specifications of the Field

The field is a rectangular maze made up of square cells.

The maze consists of a base, walls and posts.

The side of the maze can include from 5 to 16 cells.

There is a continuous outer wall around the perimeter of the maze.

The base of the maze is a matte black rectangle, on which posts and walls are installed.

The post is a rectangular parallelepiped of white color for fixing the walls of the maze. At least one wall must be adjacent to any post.

Post Specifications:

- height – 50 mm;
- width – 12 mm;
- depth – 12 mm.

The wall is a rectangular parallelepiped of white matte color with fasteners to the post. The wall is always installed between two posts.

Wall Specifications:

- length – 168 mm
- height – 50 mm
- width – 12 mm
- depth – 12 mm
- color of the upper side for the starting and finish areas is white, for all other walls - red.

The cell is a 180 mm square on the base formed by the posts and walls.

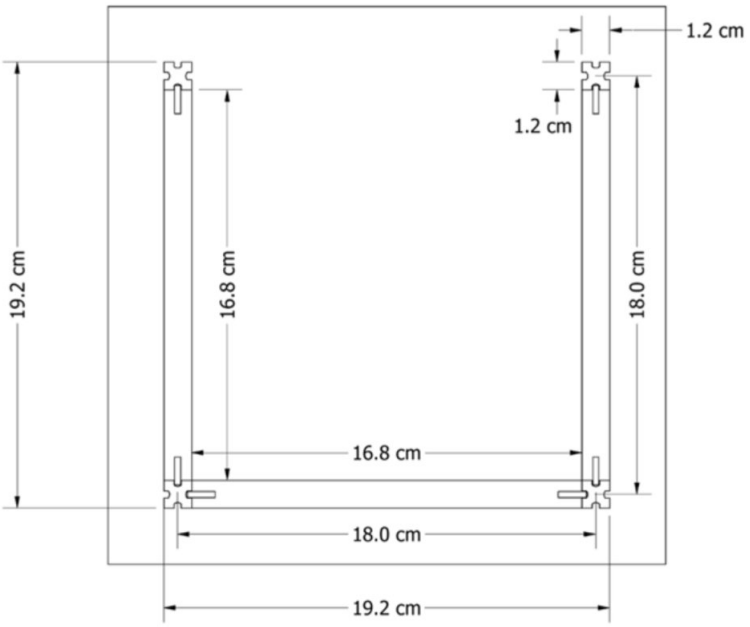


Figure 1. The maze cell

The starting area (starting cell) is located in one of the corners of the maze, surrounded by 3 walls, the upper side of the walls is white.

The starting line is located between the first and second cell.

The finish area (one or four cells) is determined just before the competition (on the day of the competition), the upper side of the walls is white. The finish area has only one entrance.

The finish line is located at the entrance to the finish area.

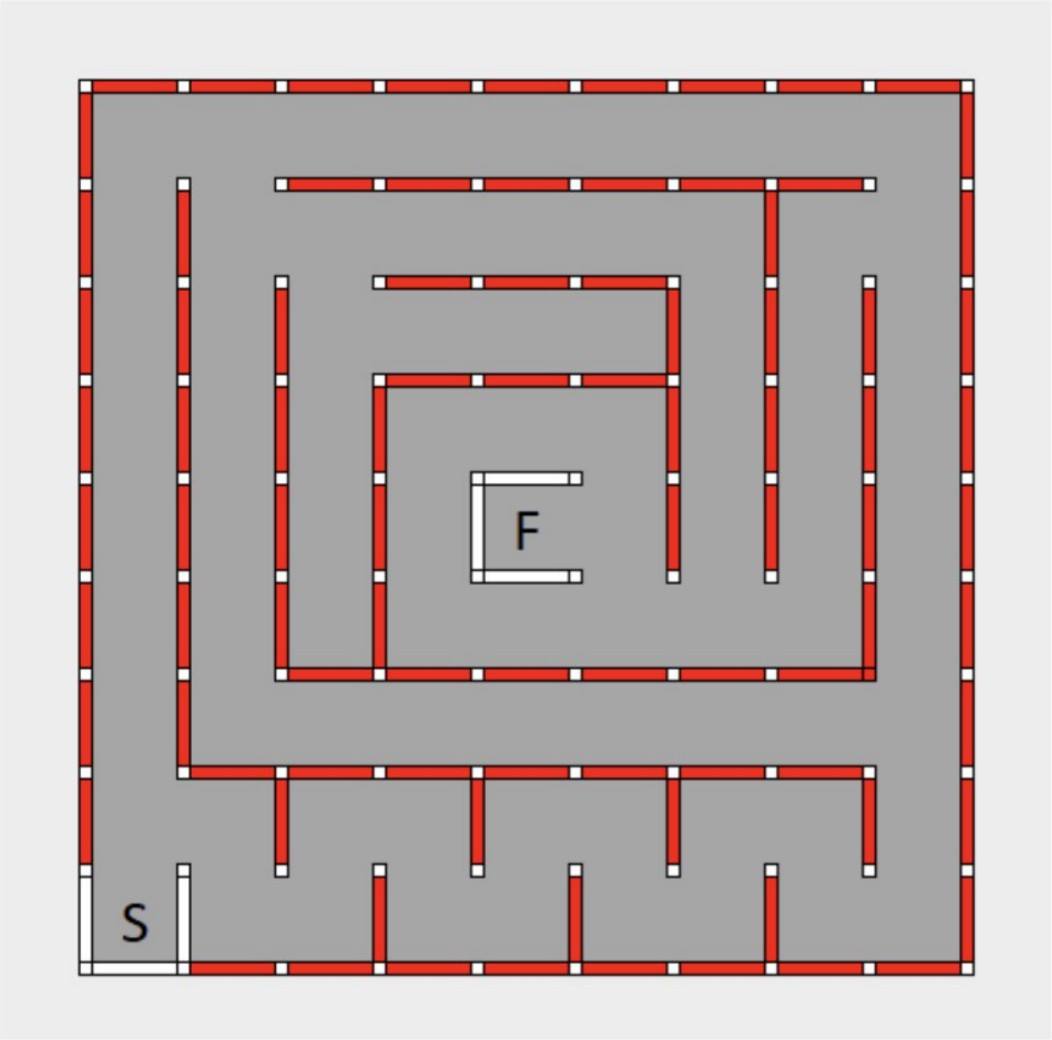


Figure 2. Maze configuration example

4. Contest Procedure

Before the competition starts, all the participants place their robots to the Quarantine area. During the competitions, the participants may take robots from the Quarantine area only and at the Judge's command only.

Before the competition starts, the configuration of the maze will be changed. All participants must place the robots in the Quarantine before the changing of the maze configuration starts.

Each team is given from 5 to 10 minutes to go through the maze, depending on the number of cells of the maze at the discretion of the Organizers.

The team is given an unlimited number of attempts to complete the task.

It is allowed between the runs to:

- clean the robot's structural elements;
- switch modes of operation;
- change the energy source;
- fix mechanical damage.

During the run it is forbidden to:

- reprogram the robot.

The time of the best attempt is counted.

In case the robot did not go through all the maze, the lowest number of cells remaining to the finish area counts.

4.1 Run

Before the start of the run, the operator places the robot in the starting area of the first field so that no part of its projection extends beyond this area.

At the judge's command, the operator launch the robot. The time countdown starts from the moment the robot's projection crosses the starting line..

The operator may interrupt the run at any time.

The run is interrupted if:

- a team member touches the robot outside the starting or finish area;
- the time allotted to complete the task has expired.

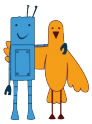
The maze time is measured by the electronic timing system or manually by the Judge using a stopwatch.

The run time is counted from the moment the robot crosses the starting line to the moment the robot crosses the finish line. The robot is considered to have crossed the line when its projection on the field crosses the line.

5. Disqualification

In the following cases the attempt will be disqualified:

- the robot is non-autonomous (external control of the robot).



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6. Scoring

N/A

7. Procedure for Determining the Winner

The winner is the team whose robot has spent the least time to go through the maze.

If the robots did not go through all the maze, the team whose robot was closer to the finish line during the runs is declared the winner.