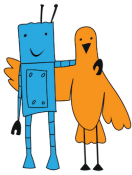


## «JOURNEY: HIGH» CONTEST RULES

*Version 2.0 dated August 2, 2019*

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## 1. General Provisions

### 1.1. Task Description

Within one run, the robot must successively complete the tasks of:

- the “Line Follower with Moving Obstacle” section;
- the “Labyrinth” section;
- the “Line Follower with Inversion” section;
- “Kegelring” section

and then deliver the central Kegelring skittle to the starting area of the first section, performing the sections’ tasks in reverse order.

## 2. Requirements for the Robot

See the “Journey” General Contest Rules.

## 3. Specifications of the Field

The general view of the field is shown in Fig. 1.

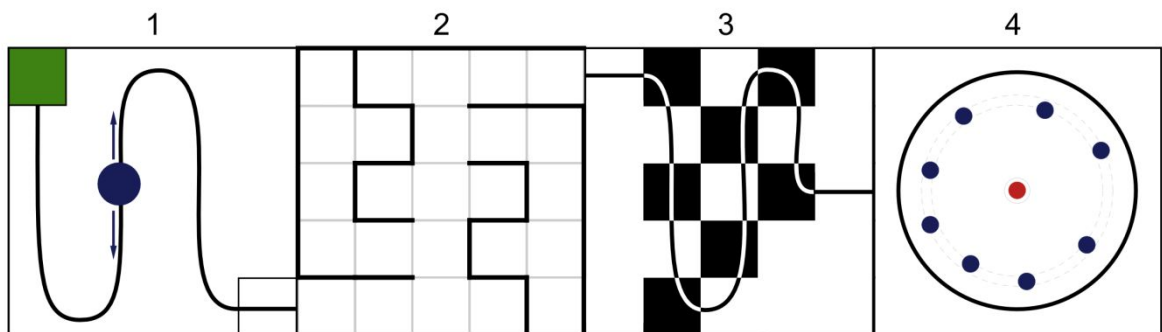
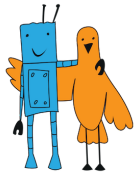


Figure 1. “Journey: High” Scheme of Fields.

1 - “Line Follower with Moving Obstacle”, 2 - “Labyrinth”, 3 - “Line Follower with Inversion”, 4 - “Kegelring”.

### 3.1. Line Follower with Moving Obstacle

For the general Field Specifications see the “Journey” General Contest Rules.



There is an obstacle represented by an autonomous robot moving along the line at the “Line Follower with Moving Obstacle” field.

The line section along which the obstacle moves is limited with special white markers in the form of a squares with a side of 10 mm. The white markers are placed no closer than 100 mm to the rounded sections. Having reached the marker, the obstacle changes its direction to the opposite one.

The Robot-Obstacle Specifications:

- form - vertical cylinder;
- diameter - 160 +/- 20 mm;
- height - 200 +/- 20 mm;
- body color - white;
- surface material - matt-finished plastic;
- speed of movement of the robot-obstacle - from 50 to 100 mm/sec.

## 3.2. Labyrinth

For the Labyrinth Field Specifications see the “Journey” General Contest Rules.

## 3.3. Line Follower with Inversion

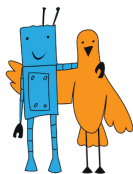
For the general Field Specifications see the “Journey” General Contest Rules.

The “Line Follower with Inversion” field is divided into the cells (rectangular cells are allowed). The cells are painted black and white in chessboard order. Starting and finish cells are white. The track line consists of white and black sections so that the line color is opposite to the color of the cell which this line crosses.

## 3.4. Kegelring

For the Kegelring Field Specifications see the “Journey” General Contest Rules.

There is a central skittle of red color In the center of the ring (for other specifications of the skittles see the “Journey” General Contest Rules).



## 4. Contest procedure

The robot must successively complete the sections' tasks, capture and deliver the central Kegelring skittle to the starting area of the first section, performing the sections' tasks in reverse order.

The time allotted for the run is 5 minutes.

The central skittle is considered to have been delivered to the starting area if any part of its projection is above the starting area.

If the race is interrupted, the central skittle is considered to be lost. The participant is allowed to remove the captured skittle by him/herself.

Each field has its own starting and finish areas. These areas are shown in Table 1 and Figure 2.

Table 1. The starting and finish areas

Nº	Section	Forward Direction		Backward Direction	
		Starting Area	Finish Area	Starting Area	Finish Area
1.	Line Follower	A	B	G	A
2.	Labyrinth	B	C	F	G
3.	Line Follower	C	D	E	F
4.	Kegelring	D	E	D	E

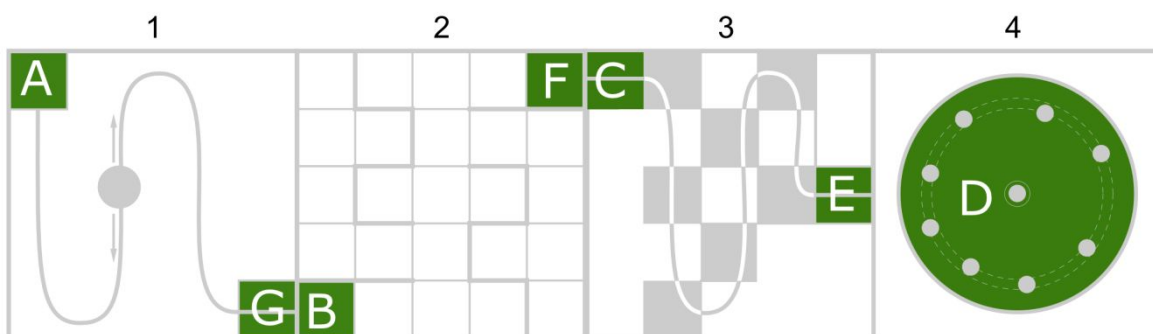
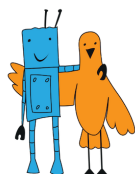


Figure 2. "Journey: High" starting and finish areas



## 4.1. Line Follower with Moving Obstacle

For “Line Follower with Moving Obstacle” Contest Procedure see the “Journey” General Contest Rules.

The robot must overtake the moving obstacle or pass of oncoming obstacle.

## 4.2. Labyrinth

For “Labyrinth” Contest Procedure see the “Journey” General Contest Rules.

## 4.3. Line Follower with Inversion

For “Line Follower with Inversion” Contest Procedure see the “Journey” General Contest Rules.

## 4.4. Kegelring

For “Kegelring” Contest Procedure see the “Journey” General Contest Rules.

At his/her own discretion, the participant determines the sequence of capturing the central skittle and pushing the peripheral skittles out.

After the peripheral skittles have been pushed out and the central skittle has been captured, the robot must move to the finish area E (see Fig. 2) and perform the tasks of the sections 1-3 in the reversed direction.

## 5. Disqualification

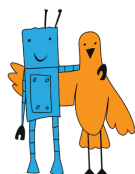
For the conditions of disqualification see the “Journey” General Contest Rules.

## 6. Scoring

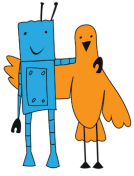
The robot scores points for completing each section task according to the Table 2:

*Table 2. Scoring*

Action	Points
The section 1 task is complete	40



Action	Points
The section 2 task is complete	80
The section 3 task is complete	40
The section 4 task is complete	5 (for each of 8 skittles)
The section 4 task is complete in the reversed direction <b>with</b> the central skittle	40
The section 4 task is complete in the reversed direction <b>without</b> the central skittle	20
The section 3 task is complete in the reversed direction <b>with</b> the central skittle	40
The section 3 task is complete in the reversed direction <b>without</b> the central skittle	20
The section 2 task is complete in the reversed direction <b>with</b> the central skittle	40
The section 2 task is complete in the reversed direction <b>without</b> the central skittle	20
The section 2 task is complete by <b>the shortest route</b> in the reversed direction <b>with</b> the central skittle	80
The section 2 task is complete <b>by the shortest route</b> in the reversed direction <b>without</b> the central skittle	40
The section 1 task is complete in the reversed direction <b>with</b> the central skittle	40
The section 1 task is complete in the reversed direction <b>without</b> the central skittle	20
Total maximum	400



## 7. Procedure for Determining the Winner

See the “Journey” General Contest Rules.