Pirates

Deadline: 13.6.2021

Points: 25

Material requirements: PC or Laptop (no Tablet) with Browser (no Safari)
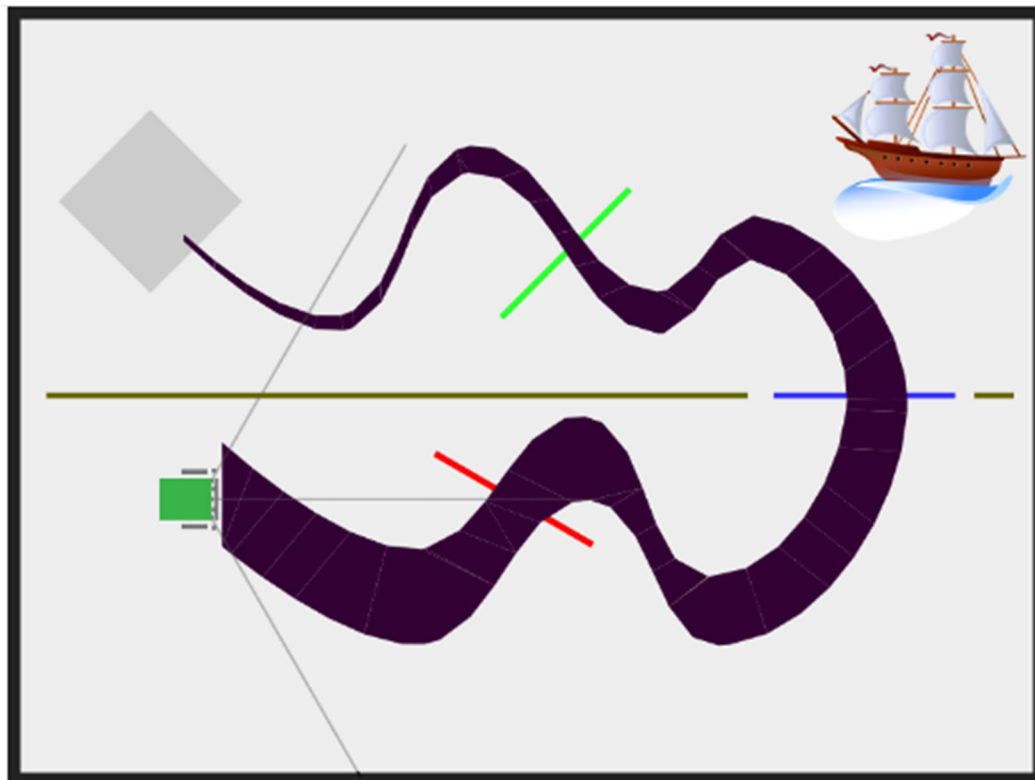

Topic description

You have found a treasure map, follow it and take the treasure.

We wish you a lot of fun with this and the following tasks!

Task description

Visit our online simulation environment again (ide.pria.at) and create a new project with the "Pirates" task as a base. Open your project and the simulation task should look like this.

Follow the black line with the robot to the pirate ship, there you can collect the treasure and bring it to the end of the line. There you have to put the treasure down again.

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Your program must be able to follow the line automatically, simply following a fixed path is not allowed and will result in a very large point deduction.

Pirat ship

To see if you are already close enough to the pirate ship, you can find the block "Pirate ship nearby?" in "Custom".

This returns false as long as you are not yet in range of the treasure and returns true as soon as you are close enough to the ship. So you can use the block as input for decision blocks.

Treasure

You can collect the treasure as soon as you are close enough to the pirate ship with the " Pick up treasure" block, in "Custom".

You must then move it further along the line into the gray area. There you can use the " Drop treasure" block in " Custom" to place the treasure there.

Sensors

The following four sensors are available so that the robot can follow the black line:

- Sensor 0: left outer line sensor (front left of the robot) - Analog
- Sensor 1: left inner line sensor (slightly left of center, at the front of the robot) - Analog
- Sensor 2: right inner line sensor (slightly to the right of the center, at the front of the robot) - Analog
- Sensor 3: right outer line sensor (front right of robot) - Analog

If a sensor is above the black line, it provides a high value, but if it is not on the line, it provides a low value.
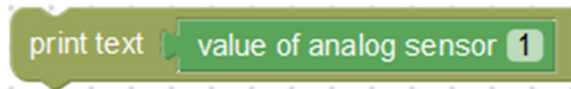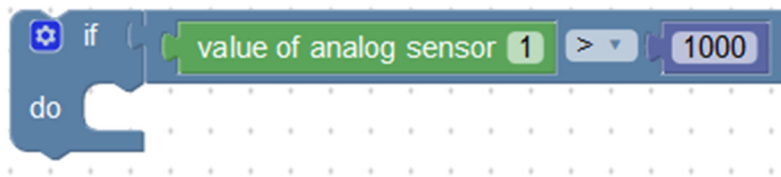
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For example, to read the current value of the left inner line sensor, you can use the following blocks:

Together with comparison blocks, sensor values can thus serve as input for loop conditions and decision blocks. Example:

For more details about the use of sensors please have a look at the task "Labyrinth".

Submission

Please submit your Blockly program and a screen video of a successful run.

Evaluation criteria

- Robot picks up treasure and brings it to the gray area
- Screen video and Blockly program file submitted
- Jury evaluation: The jury evaluates the quality and creativity of the submission.