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Lego Line Follower

Countries:	Hungary	Poland
Suitable for grade:	1 - 2	2 - 3
Specialization:	IT	IT
Project teacher:	Csaba Deák	Dariusz Jędrzejek

Project description:

The task consists of two stages:
- The first stage is to agree with the other project teams ("Lego Automatic Parking System" and "Lego Robot following the exit labyrinth") the design of the robot - this construction will be the same to each team. Particular emphasis should be placed on the selection of the drive structure, the location of the sensors and the dimensions of the structure.

- The second stage - in this part, the design of the tracks and a programme controlling the robot "Lego Line Follower" should be created in the first place. The programme should be able to ride along the line in the quickest possible time.

Project tasks:
Student #1 (PL):

- cooperation with the "Lego Automatic Parking System" and "Lego Robot following the labyrinth exit" teams
- cooperation in the design of the robot (dimensions, power transmission system, sensors' type and their location, etc.)
- cooperation in the determination of the Lego Mindstorm hardware configuration
- cooperation in the determination of the track's form and shape
- the design of the instruction for the model construction
- construction of the model at students' home school
- writing the control programme and programming the robot by a PL student
- the ride of the Line Follower along the track
- both students – the development of an algorithm, which will ride along the tracks in the most efficient way

Student #2 (HU):

cooperation with the "Lego Automatic Parking System" and "Lego Robot following the labyrinth exit" teams
- cooperation in the design of the robot (dimensions, power transmission system, sensors' type and their location, etc.)
- cooperation in the determination of the Lego Mindstorm hardware configuration
- cooperation in the determination of the track's form and shape
- the design of the instruction for the model construction
- construction of the model at students' home school

- writing the control programme and programming the robot by a HU student - the ride of the Line Follower along the track - both students – the development of an algorithm, which will ride along the tracks in the most efficient way
Success criteria: Building a working robot that will complete the designed task – riding through the whole track in the quickest time possible (in relation to the algorithms developed by HU and PL students)
Developed hard skills: Designing the construction of the robot, writing the control programmes, algorithm programming and testing, making changes to improve the robot's efficiency.
Developed soft skills: Communication with other team members, technical and programming problem solving, planning the project work, keeping deadlines