



USE CASE 15

Robot Competition

Primary Actor and Main Goal

Her school does not have any subjects that are anywhere close to robotics, but her enthusiasm has reached one of the teachers. This teacher's son happens to be an engineer that has experience with building robots.

Topic and Content

Not wanting Alex's enthusiasm go to waste, the teacher has convinced the school to let his son Juri, an engineer, help out by running a small robotics class as an extracurricular activity once a week. A few other students, besides Alex, also joins the class.

Age & Level

Alex, Finland
Student
12 years old

Alex is a 12 year old girl from that goes to a small school in Helsinki, and she loves robots. She has seen video clips online of all kinds of robots and would like to build a robot one day.

Description of Environment and Possible Pre-conditions

Juri has managed to gather up a good assortment of components and sensors for use in class, and he found some suitable tutorials on how to build in the components with Arduino boards. To engage the whole class, he suggests that the class compete in a robot competition for 11 year olds and up. The class, and specially Alex, wants build a robot to join in the competition.

Preparatory Work

With the components and the tutorials, the class spends a few weeks on learning the basics on how you control motors and how to use sensors. Juri shows the class more details of the robot competition and the class decides join the competition with a dancing robot

Description of Activity

The competition rules are that the robot needs to be able to make an on stage act, without any human controlling it, but can interact with the audience. So Alex and the class chose to make the robot move differently depending of the type of noise the audience makes.

As the class is progressing, Alex spends more and more time with the project but finds it hard to figure things out on her own. Much of that which she can find online is excessively complicated for her. Even when Juri is helping, there is a limit to how much he can simplify while still getting any functioning results. Finally, she finds on the eCraft2Learn UUI a similar project with very detailed instructions that she is able to follow. Still she needs the help from Alex to attach the motors on the robot so that it can move. However, getting the robots movements to be controlled by the input from noise sensors became time-consuming for the whole class and when it was close to finished, the deadline for joining the competition unfortunately was passed.

Other Stakeholders and Their Possible Interests

During the time the kids spent in the extracurricular activity, the school started to get feedback from the parents with kids in the robotics class. The parents were happy that their children were building robots, and they seem engaged with it. Alex's parents, however, were concerned that Alex spent too much time on the robotics class and too little on the normal classes.

Success and Condition

The robotics class was a success and the school wants it to continue the next year, but the school wants to make a syllabus to keep a better structure for the class. It is also important to document what the students have been doing in the class..

Failure and Conditions

Although the students missed the deadline for the competition, the class was a success. The students were able shown that they are able to build a robot fitting the rules of the competition, but they were lacking the structure in the class and this made it hard for the students to progress evenly.

