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Atmosphere Control of a House

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Abstract

The project consists in the prototype of a house, whose atmosphere is controlled automatically. Specific Aims of learning: studying the Arduino board and sensors for collecting information, controlling and executing actions, knowing the language of programming needed, searching for solutions to the challenges using technological resources. With this project the students got to know better the functioning of some sensors and how to apply them in other contexts. And they realized the importance of home automation in people's lives.

Keywords

Automation; electronics; energy; robotics; sustainability.



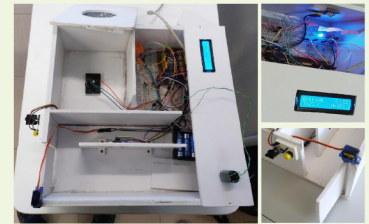
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Resumo Abstract

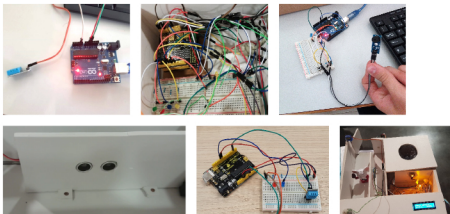
The project consists in the prototype of a house, whose atmosphere is controlled automatically. Specific Aims of learning: studying the Arduino board and sensors for collecting information, controlling and executing actions; knowing the language of programming needed; searching for solutions to the challenges using technological resources. With this project the students got to know better the functioning of some sensors and how to apply them in other contexts. And they realized the importance of home automation in people's lives.

Keywords: robotics, automation, electronics, sustainability, energy, programming, sensors and actuators.



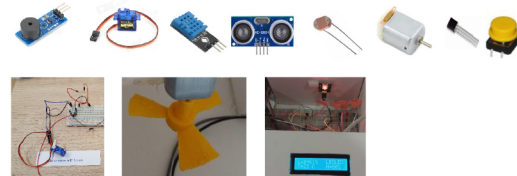
Sentir Feel

Students in their daily lives at home realized that there were situations of energy consumption and control that could be minimized and automated using sensors and actuators. This promotes energy savings and greater user comfort. Some of the students did internships in organizations where they could see the importance of home automation in today's society.



Imaginar Imagine

The students belonged to the professional Mechatronics technician course and had access to knowledge and resources that allowed them to create a model of a house to try different solutions. The students detected several problems / solutions and, according to their proposals, were divided into thematic groups. They had to analyze several sensors and actuators to see which ones were most suitable.



Criar Create

The students created the structure of a house, where:

- the light in the room only turns on if there is not enough natural light;
- there is a cooling system that is activated when the temperature is higher than the set;
- air temperature and humidity values are read in real time;
- it is possible to know if someone is in a certain area of the house;
- the entrance door opens under certain conditions;
- it is possible to record the information of the various events whenever a sensor detects the desired one.

Partilhar Share

The project was presented at the school in workshops and in robotics contests.

The project is properly documented in a strategy level, and allows to reproduce the various sections, improve and bring ideas to other similar projects.

