Protect Bees, Save the Future

I. Madaleno, S. Branco

To cite this article:

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I. Madaleno[1], S. Branco[1], students from 10th Grade Mechatronics[1]

[1]Externato Cooperativo da Benedita, Benedita, Portugal

Abstract

In this project students built a hive by adapting remote control systems for its internal environment (temperature and humidity) and external environment (door, fire, location). The solution was aimed at beekeepers, and anyone interested in getting started in the beekeeping industry. The main goals of the project were to facilitate the work of beekeepers and to improve the management, control and monitoring of hives. The solution created is feasible and satisfies the project's objectives.

Keywords

Automation; bees; electronics; robotics; sustainability.

Open Schools for Open Societies

Conferência OSOS
Open Schools for Open Societies
Pavilhão do Conhecimento – Centro Ciência Viva
14 Fevereiro 2020

Protect Bees, Save the Future

Externato Cooperativo da Benedita • Benedita • Inês Madaleno e Samuel Branco • 10º Mecatrónica

Resumo Abstract

Build a hive by adapting remote control systems for its internal environment (temperature and humidity) and external environment (door, fire, location). The solution is aimed at beekeepers, and anyone interested in getting started in the beekeeping industry. Its objectives are: to facilitate the work of beekeepers, to improve the management, control and monitoring of hives. The solution created is feasible and satisfies the project's objectives.

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

Sentir Feel

Bees are the main element in pollination, influencing agricultural production and indirectly the world food. In addition to honey, we can obtain other essential resources directly. There are some problems that are leading to a decrease in the bee population: environmental, fires, use of pesticides, human action and even the lack of care and training of beekeepers. This project started because one of the students is a beekeeper and because of the existence of previous projects related to this theme.
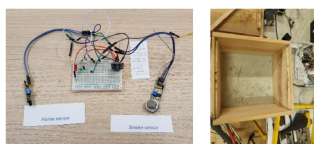
Imaginar Imagine

These problems were analyzed together with beekeepers who helped in the construction of the idea to solve the problems identified together. The experience gained by students in participating in contests also helped them. Namely the presentation of the idea in a contest on entrepreneurship. After identifying the problems, the students had to analyze several sensors and actuators to see which ones were most suitable and the places to place them.
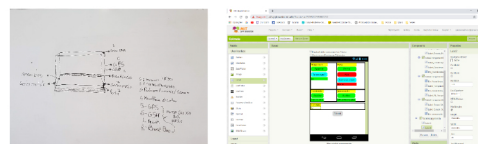
Criar Create

The students introduced the following aspects to a hive:

- Control by an App, through the exchange of SMS.

- Control of the internal environment.

- Control of closing and opening the door (facilitates transport).

- Smoke and flame detector.

- GPS hive location system (theft).

- System supply via a Power Bank / battery with SMS alerts for replacement.

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.