A Proposal To Make Something Cool

Course: Internet of Things

Instructor: Dima Marachi

Student: Debora Evelyn Salles Antunes

Q1. Please attach a **.zip** file containing your Arduino code for your made project (**use file**).

Q2. Please attach three clear distinct **.jpg** format photos of your made project (**use file**).

Q3. Please attach a video of your made project in action (**use file**) showing all and every feature and functionality you have added.

Everything will be posted on D2L.

Q4. How does this prototype actualize the vision you articulated in your proposal (**use text**)?

• what parts of the kit did you use?

• how does your project interact with its environment?

• what obstacles did you need to overcome while building your project?

• some mystery questions related to Arduino programming.

As the activity proposal is to 'make something cool,' I thought about making something that everybody (or almost everybody, but especially me) is interested in: a robot. I started looking at some projects on the internet, and there are a lot of them. Basically, my idea was to do research on how to build a robot that uses the Ultrasonic Sensor to move itself and also includes other features that we had studied in class.

So, I added to my project an LCD with a potentiometer, an RGB led, and a buzzer with a red led, organized in one circuit built with small breadboards. The system is controlled by the Arduino Uno Controller Board and the L293D Motor Driver Module, which also controls the robot chassis (gear motors/wheels), Micro Servo Motor, and Ultrasonic Sensor. Everything is connected to a switch, supplied by one 9V battery.

It is very satisfying to imagine one thing and then make it a reality. I can tell you that my big challenges working on this project were welding for the first time (you need to be very careful to weld small parts), the 3D printing part (an Ultrasonic Sensor holder) that didn't fit, and making everything work together without any errors. In this case, I think it is necessary to have more batteries to make it work perfectly.

In the long video that I sent to you, at the first moment the robot hit the wall. It is because the Micro Servo was uneven. You can see in the short video that it was working fine, but I had to make a lot of changes and when I tried to use the 3D printing part, it got kind of broken, so I will ask Michael to reprint the part, and I will change this Micro Servo to make it work well again.

This was my first Arduino Project, and it was very fun working on it. I could learn a lot of things with something very interesting. Thanks for this opportunity to make something cool.

REFERENCES

How to make Obstacle Avoiding Robot using Arduino:
https://www.youtube.com/watch?v=bRZNyQtwZVE

How To Make an EASY Arduino Obstacle Avoiding Car Robot | DIY
https://www.youtube.com/watch?v=h-B42_HXL00

How to connect A buzzer to Arduino:
https://www.youtube.com/watch?v=vGZiePqgrnY

Liquid Crystal Displays (LCD) with Arduino
https://docs.arduino.cc/learn/electronics/lcd-displays

How to use a RGB LED with Arduino | Tutorial
https://howtomechatronics.com/tutorials/arduino/how-to-use-a-rgb-led-with-arduino/

Obstacle detection system with Arduino
https://www.robotique.tech/robotics/obstacle-detection-system-with-arduino/

Ultrasonic Sensor holder 3D project:
https://www.thingiverse.com/thing:787202