Jacobs University Bremen

Introduction to Robotics and Intelligent Systems Lab

(Spring 2020)

Lab 1

Group Members :

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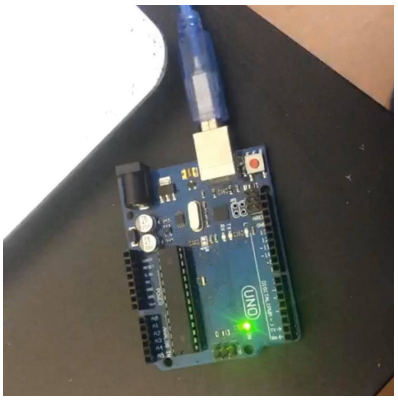
1-Introduction:

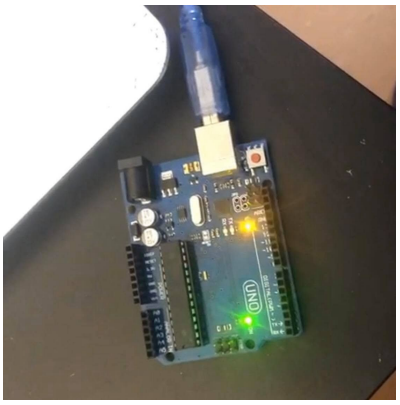
In this lab we are getting in touch with the material and discovering Arduino, working with different codes and equipments to solve the tasks we are given. This report is mainly constituted of pictures and explanations of what we did, the problems we faced, and how we solved them.

2-Lab Tasks:

Task 1.1:

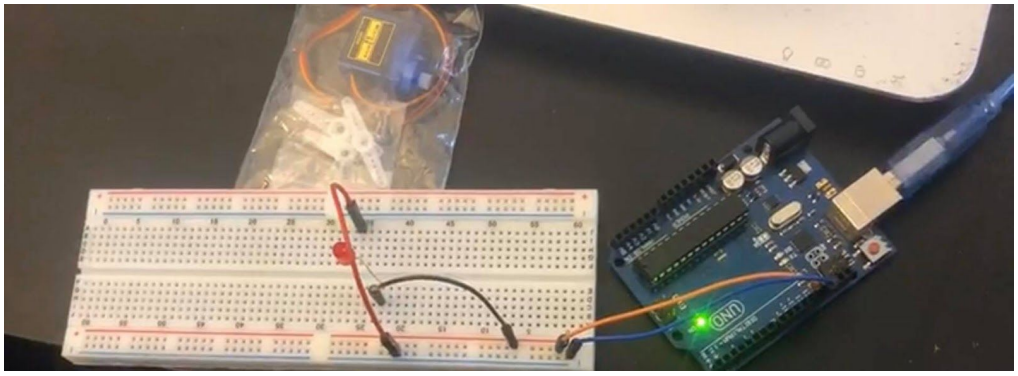
In the first task, we are trying to light the Arduino's led periodically with a delay of one second, we launched the code, with the Arduino connected but it didn't work. We figured that we had to switch the board to the set we are working with.

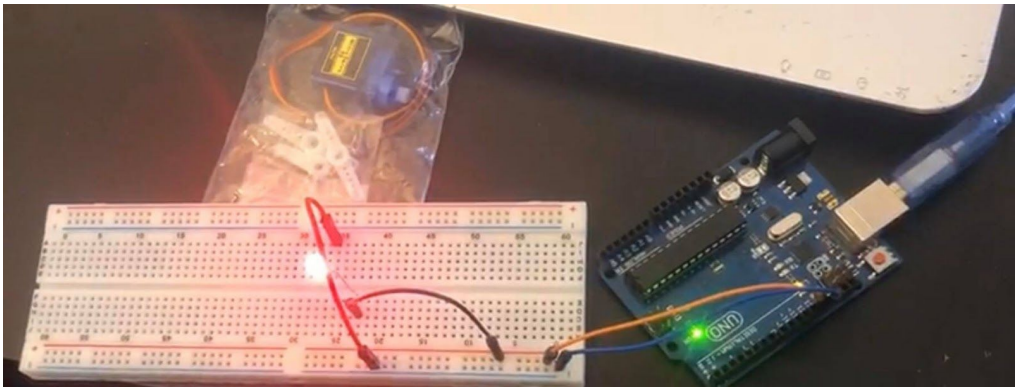




Task 1.2:

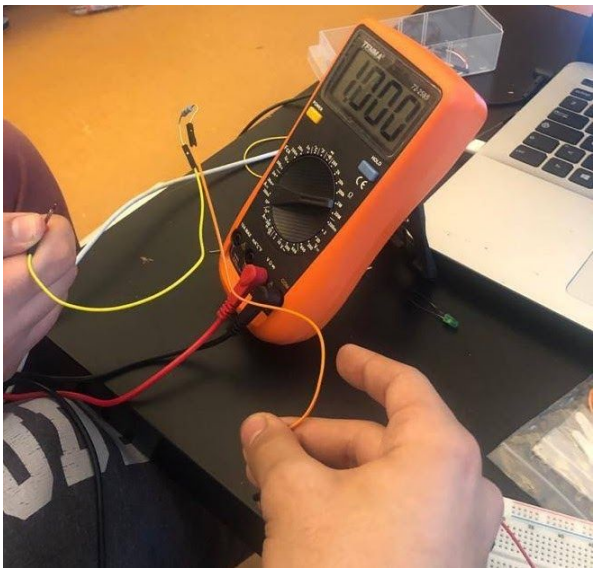
In this Task, we connected the Arduino to the breadboard as required and noticed that the led (the red one) turns on periodically too.





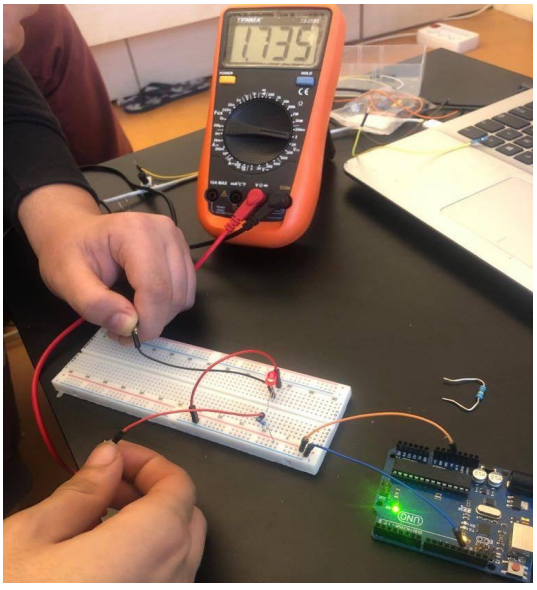
Task 1.3

The resistance we found was approximately 1.000 * 2M Ω, we wired it to additional cables so that the picture looks clearer.



Task 1.4:

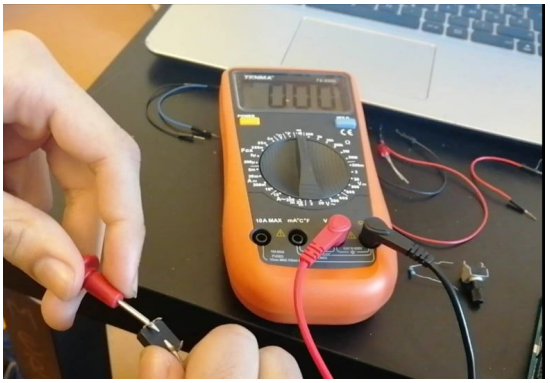
In this task we connected the Arduino to a LED and a resistance, then measured the voltage across the LED, we didn't find the alligator clips, we did the measuring manually and found 1.735 * 2 V.



Task 1.5:

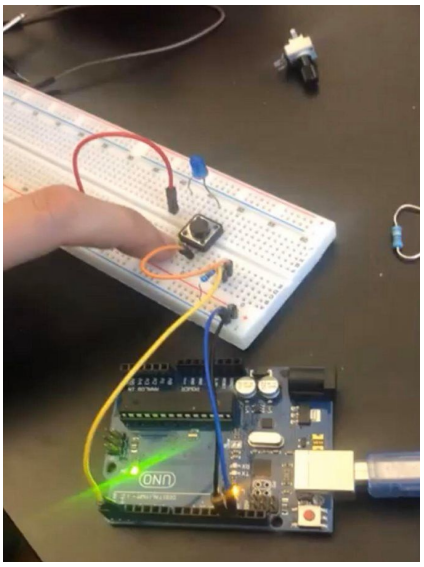
When we wired the A pin and the C pin, the multimeter started beeping, which means they are connected, we noticed the same when we connected the pins (B and D), (C and D) and (A and B) to the multimeter.

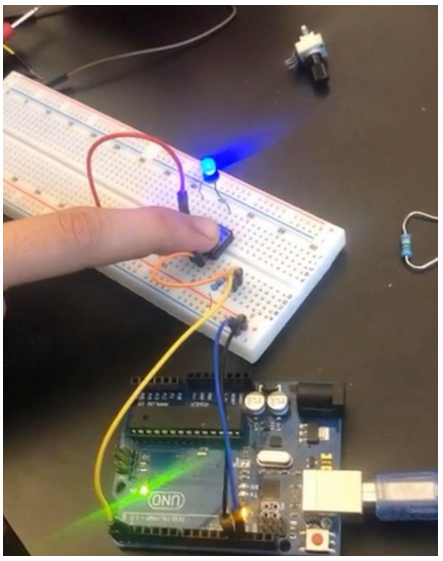
For (A and D) and (B and C), we need to press the button to permit the current to flow.



Task 1.6:

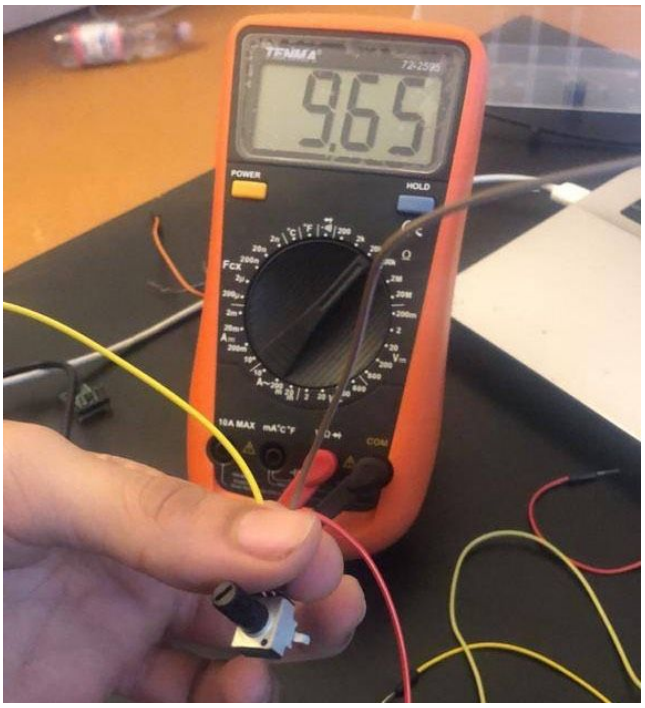
We built the circuit as requested (with a resistance of less than 330 ohm, we didn't have one that exactly matches the requirements). We run the code, then pressed the button. As expected, the blue led turned on.





Task 1.7:

In this task, we measured the resistance of the potentiometer, we notice that the value changes as we rotate it.



Task 1.8: