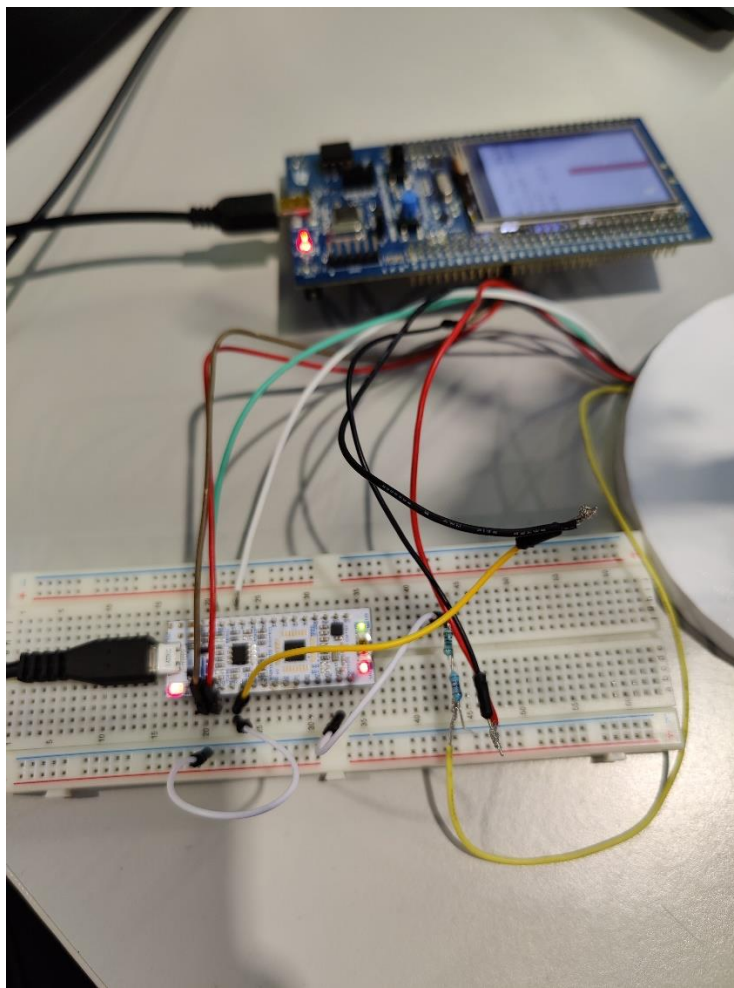


Windmill instructions

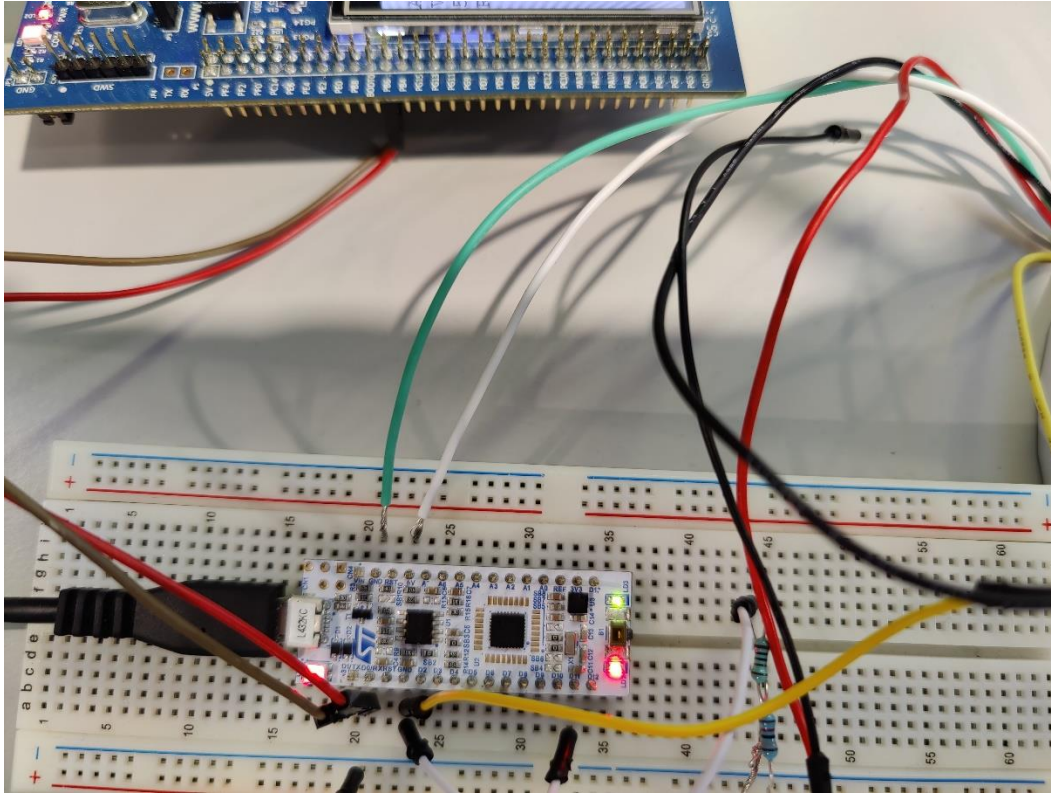
These instructions guide you to build same machine what we have already. Just follow the instructions.

First find and gather all parts to the windmill. Windmill needs three wings, stand and pole. You can create these with 3D-printer. But before that you need to model those parts with 3D-program. Then you need DC-motor, Nucleo F429ZI-DISCOVERY board, Nucleo L432KC board, a lot of wires, two USB-cables, 10k Ω resistor, 1k Ω resistor, 18k Ω resistor, hall effect sensor and 1-3 magnets.

When you have all the parts, let's start building. Build the windmill parts which you have made your own. Clue the magnet to the one wing. If you want more results, put all three magnets to different wing. When that's done, attach DC-motor to poles end. Then put some wires there. There are two pins behind the motor. Put the hall effect sensor top of the windmills pole in a way that magnets go front of it when the wing goes by. When that's done, lets put some wires to the boards. Put wires and resistors like what have done in next two pictures.



Picture 1.



Picture 2.

Of course, you haven't same colored wires so both DC-motors other and hall sensors middle wire go to Nucleo L432KC boards grounds (GND). Hall sensors left wire goes to 18k resistors leg and third one goes to 5v. DC-motors another leg hangs in the air. It will give results.

When you have survived the wires, attach the USB-cables both Nucleo F429ZI-DISCOVERY board and Nucleo L432KC board ports. Then put another side to the pc USB-port. Finally, we need anymore put codes to these boards. In the end of this instructions are link both boards with their own name. Load them to boards and the windmill is set up. Give to wings some air so that they spin, and you should get some results to LCD-display.

<https://github.com/antediluvial/L432KC-Node1>

<https://github.com/antediluvial/F429DISCO-Master>