A.1.4 Learning Activity

Development

1. Use the following list of commercial electric actuator models to prepare your activity in accordance with the instructions requested by the advisor.

- [ ] Double Reducer Motor
- [ ] Unibipolar stepper motor
- [x] Bipolar stepper motor
- [ ] Micro Servomotor SG90

2. Wait for the advisor to tell you what type of sensor will be the one that your team will develop and once have mark the sensor within the previous point.

3. Once you know the topic to be developed, investigate and write the following points within this document:

    - **Cover**, student information, advisor, career, subject, date..
    - **Introduction**, a brief description of what the topic will be about.
    - **Development**
        - **Definición**
        - **Images** of the sensor
        - **Physical** features
        - **Electrical** features
        - Explain how it behaves with the **environment** or what stimuli it responds to.
        - Applicative uses
        - You can rely on a video that should not last more than 1/3 of the time of its presentation.
    - **Conclusions** for each of the team members.
    - **Bibliography**, add within this section all bibliography in which you support the development of the activity, using tags and links.

Documento

Bibliography

Motor Video

Vestigium I1M2016 Evaluacion Perezosa En Haskell. (2016, 2 diciembre)

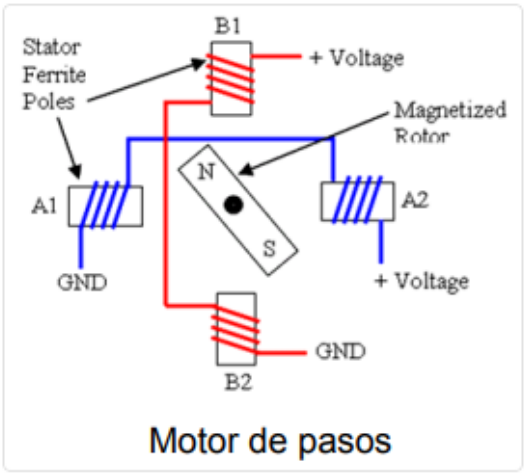
Benchoff, B. (2019, 14 junio). Changing Unipolar Steppers To Bipolar. Hackaday.

Electrical4U, Bipolar Stepper Motors: What is it?. (20–12-27). Electrical 4 U.

4. Insert images of **evidence** such as meetings of the team members held for the development of the activity.

FRANCISCO JAVIER VILLARREAL FELIX 18:29

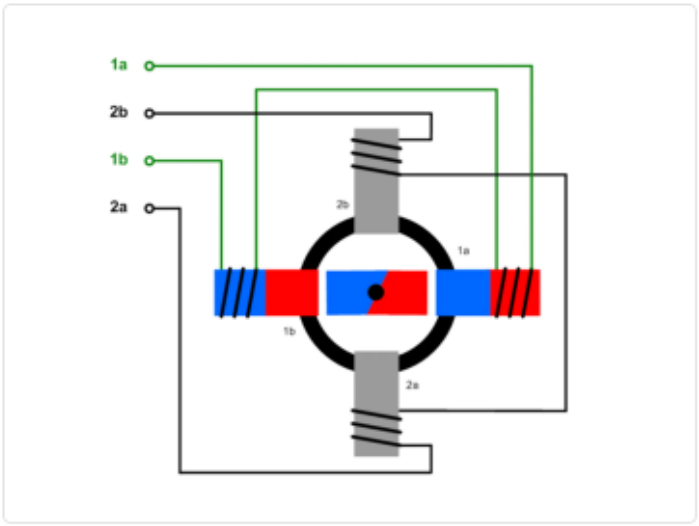
image.png



NELLY JAZMIN QUINO HERNANDEZ 18:33

http://robots-argentina.com.ar/MotorPP_basico.htm

image.png



http://galia.fc.uaslp.mx/~cantocar/microcontroladores/SLIDES_8051_PDF/21_MOTOR.PDF

FRANCISCO JAVIER VILLARREAL FELIX 19:16

https://blog.330ohms.com/2016/02/09/motores-a-pasos-unipolares-o-bipolares/

> **330ohms**

Nelly Quino

Bipolar Stepper Motors are are composed of a rotor that has 4 coils around it, which are connected in pairs, with the number we can identify each pair and with the letter we can identify pole of each coil. Work through pulses which makes it rotate a certain number of degrees but it's necessary use one driver which helps to keep it fixed and that it can rotate in both directions thus offering greater torque. This type of motors are employed in rotary tables, pointing systems and robotics.

Michelle Gasca

The bipolar stepper motor is very useful for tasks where precision is required when using motors, and above all, considerable torque.

Francisco Villarreal

The bipolar stepper motor is a motor to a certain extent more efficient to use, but at the same time more complex since it has more control in its movement and more torque which makes it more reliable when it comes to loading and moving things. It is a fairly used motor, the only thing that could be considered a problem is that a microcontroller is used to program its movement.

Rubric

Criteria	Description	Score
Instructions	Do you fulfill each of the points indicated in the instruction section?	10
Sevelopment	Did you answer each one of the points requested in the development of the activity?	60
Demonstration	Was the student present in the explanation of the functionality of the activity?	20
Conclusions	Se incluye una opinión personal de la actividad por cada uno de los integrantes del equipo?	10

Members repositories

Nelly Quino

Michelle Gasca

Francisco Villarreal