Robotic Arm Project using Arduino Uno (ONGOING)

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1. Brief description of Robotic Arm usage. [WIP]

I created a robotic arm using an Arduino Uno and various electronic components. This robotic arm has additional features like controlling movement using a joystick and monitoring the angle of each motor and displaying it on a Oled screen. This project has gone through many different versions, such as a version where to control the movement of the arm one single joystick and potentiometer were used and now it is two joysticks being used. Being able to control the arm with precision is particularly helpful for a student like me working on robotics projects and experiments. In this description, I will explain how each component is used. The joystick controls the movement of the arm's base and joints, the buzzer and led are used to warn the user that the motor has reached its maximum or minimum rotation. Depending on the input from the joystick, different motors are activated, allowing the arm to move in various directions.

2. Description of all components used.

Various components were used to obtain different functionalities in this robotic arm. Below is a list of each component, the quantity and description of usage.

- ➔ **[1] Arduino Uno:** This microcontroller was used to control the various components.
- ➔ **[4] Servo Motors:** Motors were used as the arm and joint of the robotic arm.
- ➔ **[2] Joysticks:** Joysticks were used to control the angle of each individual motor.
- ➔ **[1] Power supply:** This component was used to give power to the motor and other components.
- ➔ **[1] Buzzer:** This component is used to create a sound when the motor has reached maximum or minimum possible angle.
- ➔ **[1] Led:** The LED will turn on when the motor reaches maximum or minimum possible angle.
- ➔ **[1] OLed Screen:** This screen is used to display the various data which is read and measured by the different modules.