Department of Electrical and Computer Engineering

ENCS4380
INTERFACING TECHNIQUES

Task #3

Demonstrate the Usage of an Encoder to Control and Monitor a DC Motor

Objective:

The objective of this task is to demonstrate how to use an encoder to control and monitor a DC motor. You will use an Arduino to interface with a micro DC motor with an encoder, a joystick module, and an LCD display. The joystick will control the motor's speed and direction, while the encoder will provide feedback on the motor's position, direction, and speed, which will be displayed on the LCD.

Instructions :

1. **Connect the Components:**
   - Ensure all connections are secure and correct.
2. **Write and Upload the Code**
3. **Experiment:**
   - Change the motor speed and direction using the joystick.
   - Observe how the encoder readings change in response to motor movement.
   - Try stopping the motor and observe the encoder position.

Bonus for adding control commands over serial communication.