

This code creates a graphical user interface (GUI) using the [Dear PyGui](#) library to control an ODrive motor, monitor its position and applied force, and perform sinusoidal force modulation based on user inputs.

Code Structure Overview:

1. Motor Initialization:

- The ODrive motor is located at the beginning using `odrive.find_any()`.
- Functions for motor control, such as calibration, turning on/off, setting force, and moving to a specific position, are defined as follows:
 - `calibrate()`: Calibrates the motor.
 - `turn_on()`: Toggles the motor's state between on (closed-loop control) and off.
 - `set_force_kg()`: Sets the force applied by the motor in kilograms.
 - `move_to(position)`: Moves the motor to a specified position.

2. SineModulation Class:

- This class defines a sine wave function used to modulate values, such as the applied force, over time.
- It takes two main parameters:
 - **Frequency**: Determines how fast the sine wave oscillates.
 - **Amplitude**: Controls the range of the oscillation.
- The `modulate()` method returns the dynamically modulated set point based on time, enabling smooth force adjustments.
 - The function to modulate the set point based on position is not yet implemented.

3. Graph and Data Logging:

- The script records and logs motor data, such as position and applied force, which are plotted in real-time.
- The graph is updated dynamically using [Dear PyGui's](#) plotting features.
- **Graph Update Rate**: Set to 60 Hz (`graph_update_rate = 1.0 / 60.0`), ensuring smooth updates on the plotted data. Worth noting is that this can't be higher than the screen's update ratio.