Simple Arduino PID-Controller
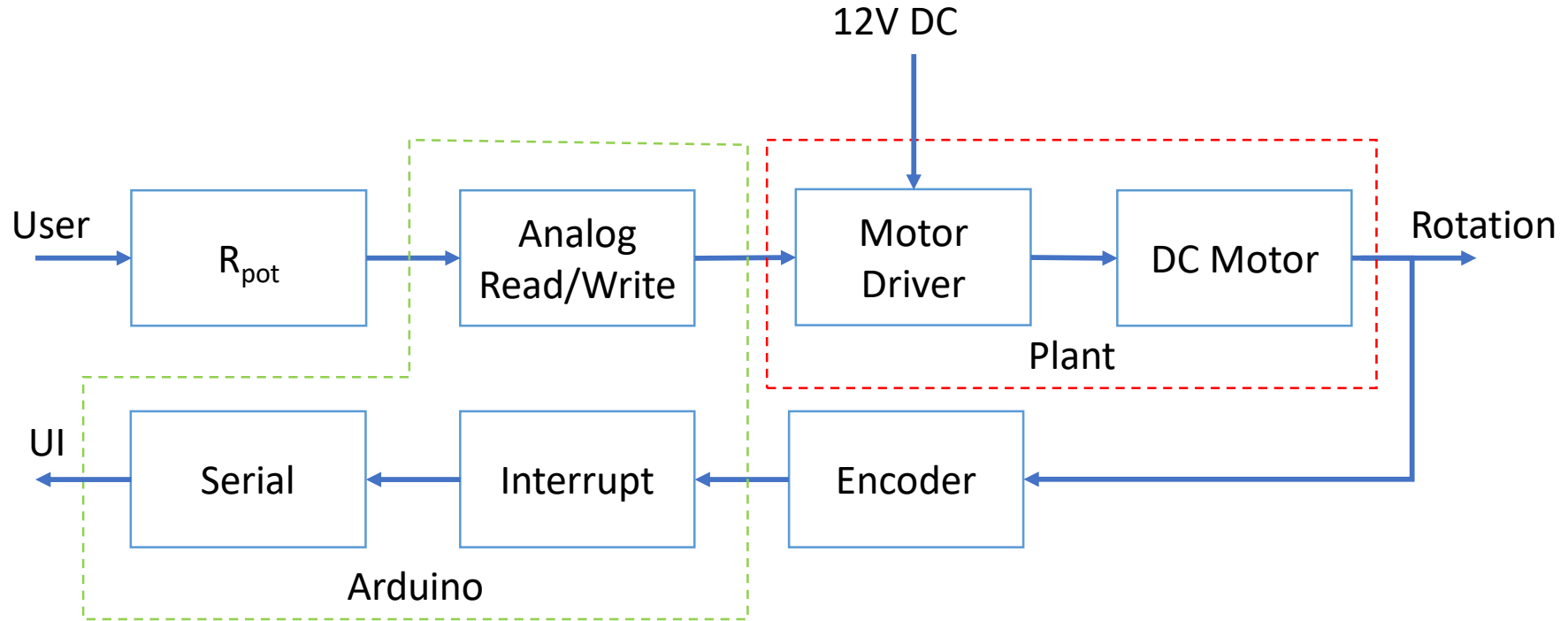
DC-Motor demo

Circuit Overview

Analog read

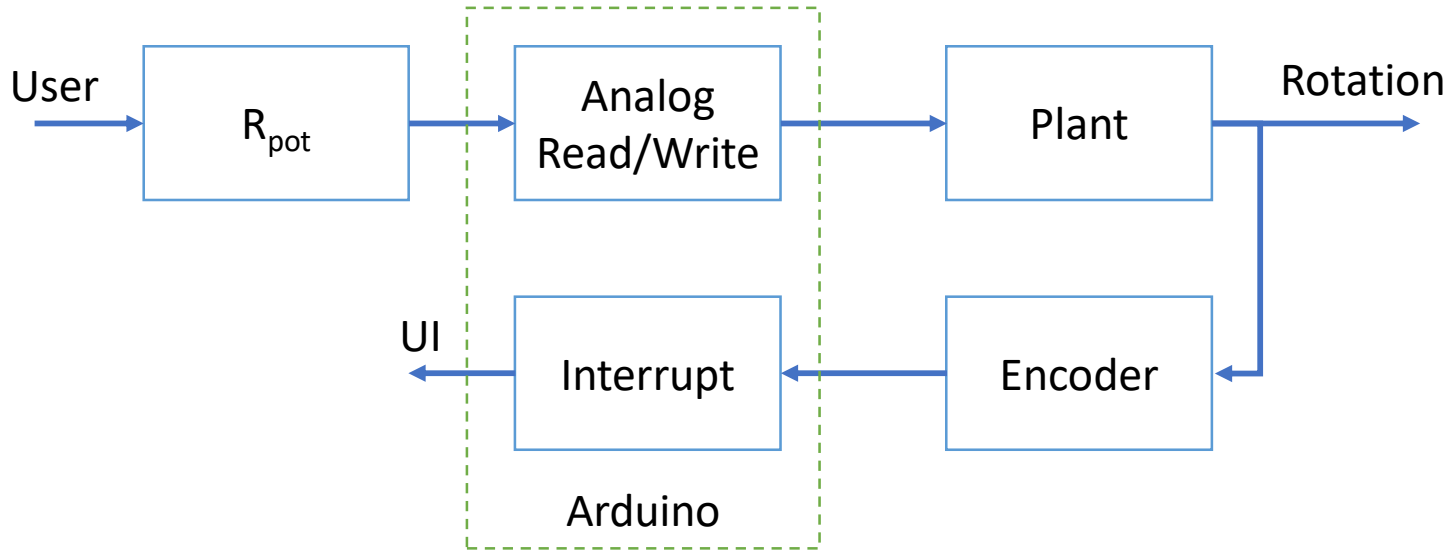Encoder interrupt

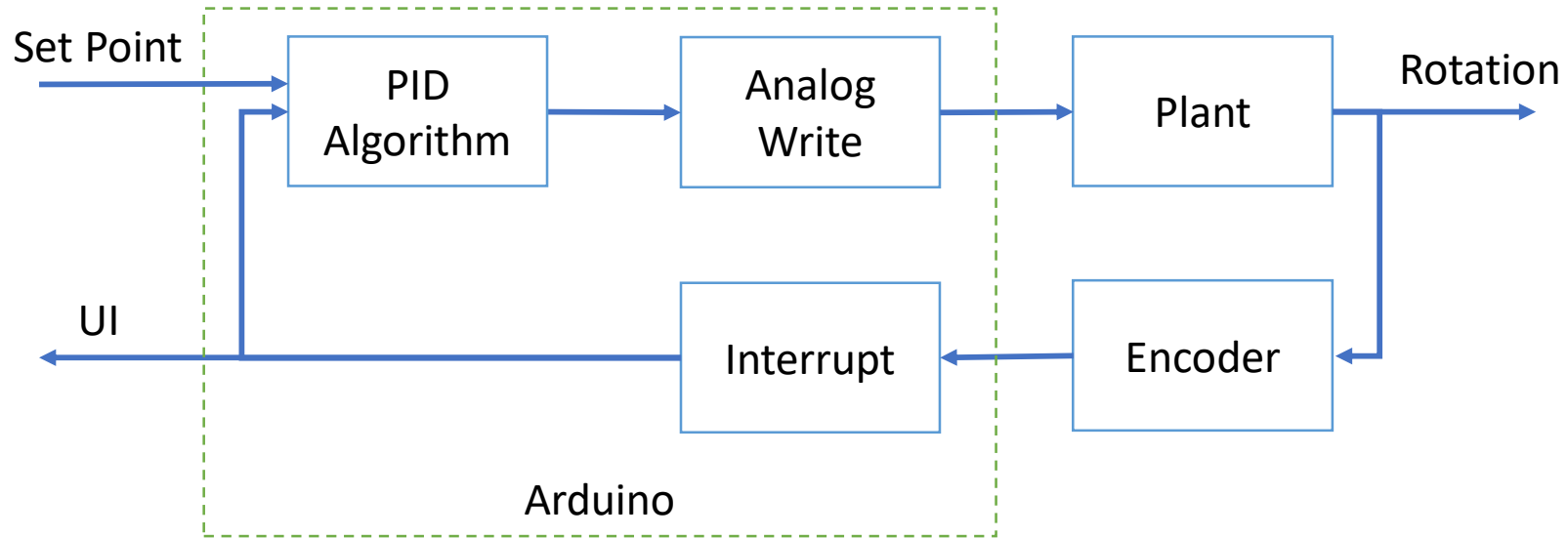Motor Voltage

Analog write

12V DC
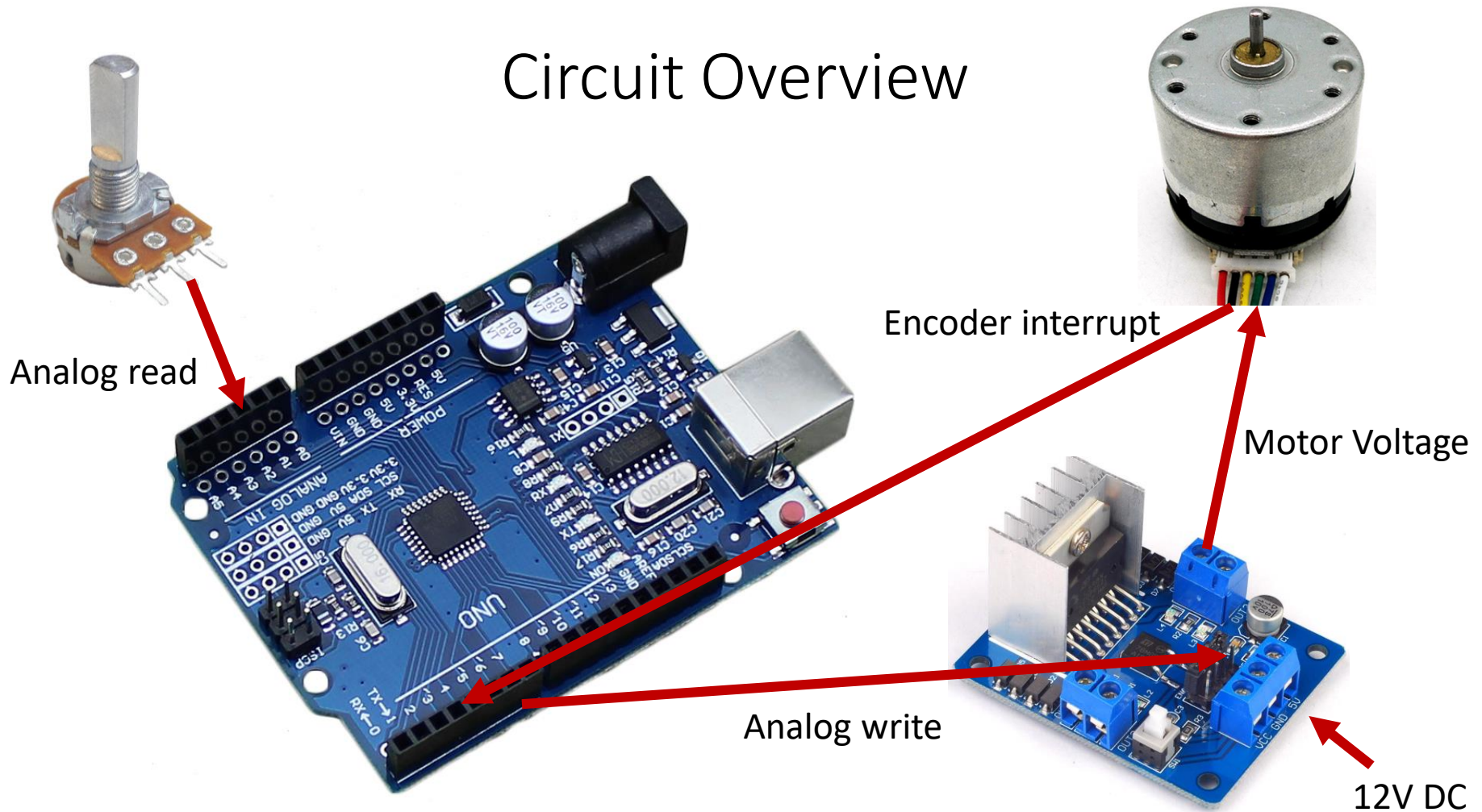
Schematic – Open-Loop

Schematic – Open-Loop (simplified)

- Assume plant dynamics do not change
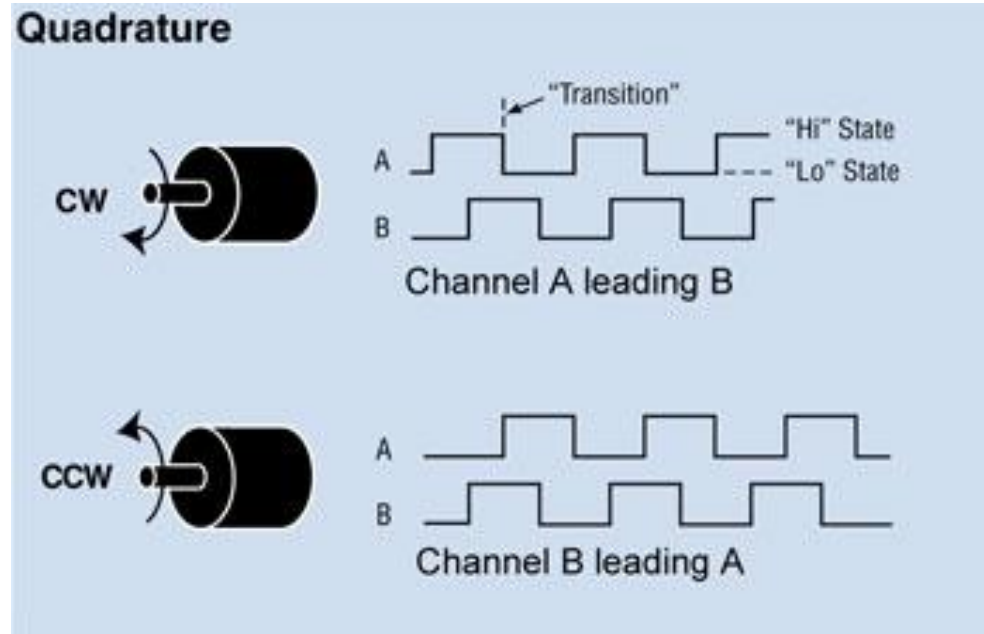- Serial output not relevant for control system
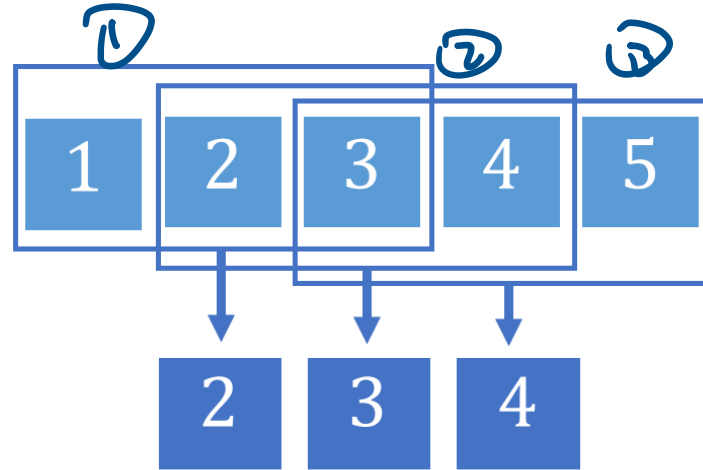
Simplify schematic

Schematic – Closed-Loop

- Remove potentiometer with fixed set point
- Add PID controller and close the loop

Quadrature encoders

Moving Average Window

moving average with window size = 3