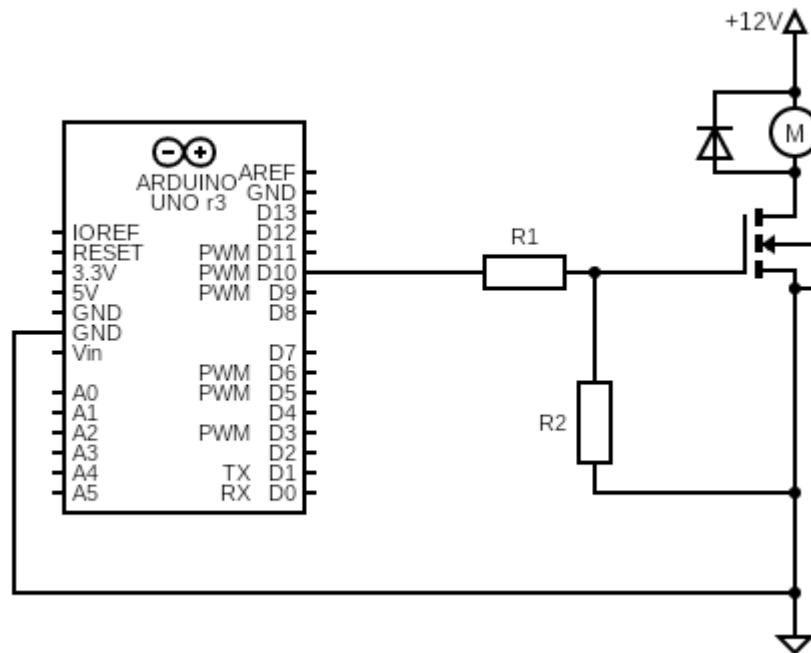


# Corrected Circuit



## Corrections

1. The diode should be reversed to protect the circuit from the Back EMF generated by the motor.
2. The MOSFET should be connected in series with the motor to control its current flow.
3. The Arduino ground should be connected to the common ground of the 12V Source.

## why Resistors are Used?

### R1:

R1 is used as a gate resistor to limit the gate current during MOSFET switching and protect the MOSFET and microcontroller from damage

**R2:**

R2 is used as a pull-down resistor to define a logic low level on the MOSFET gate when it is not actively driven, preventing unexpected MOSFET turn-on.