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DC motor controller

The idea is to use the FPGA to create a simple DC motor controller, or at least simulate the behavior of a DC motor.

We would proceed with it the following way:

- First, we would try to find the appropriate HW within the FPGA to do the calculations.
- Then, after having derived a linearized model of the DC motor (we won't focus on the modeling in this class), we will compute the model using only integers and in the right units, so as to get the appropriate precision of the model values.
- The switches on the FPGA will be used to create a user interface and change parameters of the motor, like the voltage, the current, the load, etc. A dimmer will be connected to change the power output of the motor.
- Finally, we will use VGA to display some input and output values of the motor, such as the voltage, the speed, the torque, the load and so on.