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I am going to use the STM32 Discovery Board to control the output of an old-fashioned electric typewriter, so that text may be sent from a computer and automatically typed out. The STM32 will use PWM on its GPIO pins to move two servo motors, which through coupling to belt drives, will move around a solenoid actuator over specified keys (the solenoid will be capable of depressing the key sufficiently that the typewriter types out the corresponding letter). The STM32 will use I2C to communicate with a bluetooth module, allowing two-way communication with a PC for sending text. Additionally, a proximity sensor will be placed adjacent to the keyboard, such that the microcontroller may register the placement of hands on the keyboard and prevent actuation of the automatic typer until the hands are removed, in order to prevent unwanted collisions. The solenoid actuator will be positioned using the H-Bot configuration, which allows for both stepper motors to be stationary thereby reducing the inertia of the moving parts.

Website: <https://sites.google.com/view/stm32typewriter/project-proposal>