Programmable voltage source

N. Natarajan

1 Objective

To create a programmable voltage source using OCx interrupt.

2 Task

In this project you have to create programmable voltage source. The program will read a two digit decimal number and create a PWM signal on the port D pin PD3. The average voltage should be 1/10-th the input value. For example, if the user enters 26, the average voltage should be 2.6 Volts. Your main loop must perform the following tasks:

1. Read the input from the user and adjust the duty cycle of the PWM signal accordingly.

2. Measure the output voltage using the onboard A/D convertor and display it on the screen. You will have to write a function that will print a number between 0 and 50 in decimal.

Note: You must clearly state how you handle the two extreme values: 0 volts and 5 volts.