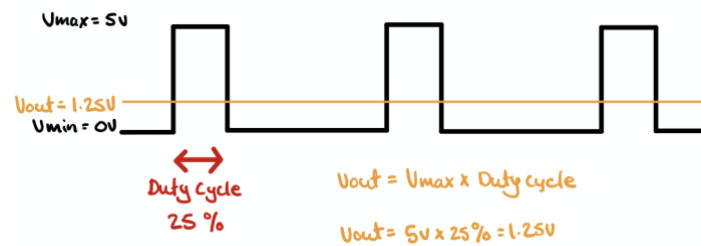


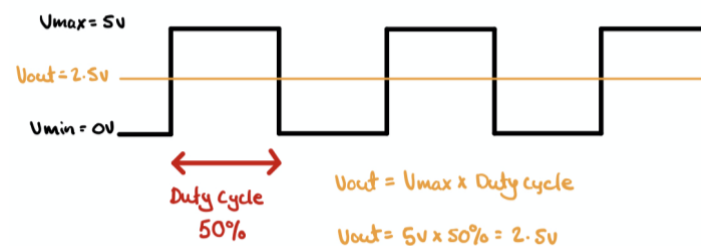
Description of PWM

PWM stands for Pulse Width Modulation which can be used to control the duty cycle of a modulating square wave frequency. The maximum and the minimum voltage (amplitude) of the frequency is dependent on the voltage supplied by the power supply. A full repartition of square wave is called the period and it is measured in cycle time seconds. Using the period the frequency of the wave can be calculated, where the *frequency* (f) = $\frac{1}{\text{period}(t)}$.

In PWM is the concept of controlling the for the time the period is high (duty cycle). The calculation of the duty period is *buty cycyle%* = $\frac{\text{mark}}{\text{period}(t)} \times 100\%$. In a PWM signal the voltage at the output is the maximum voltage multiplied by the duty cycle percentage. So, this suggests that when the duty cycle is increased the output voltage increases and when the duty cycle is decreased the output voltage decreases.

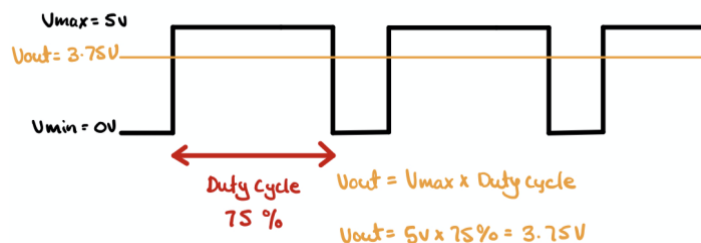


A duty cycle of 25% outputs an output voltage (V_{out}) of 1.25V. Note that the maximum voltage is 5v and the minimum is 0V.



A duty cycle of 50% outputs an output voltage (V_{out}) of 2.5V. Note that the maximum voltage is 5v and the minimum is 0V.

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A duty cycle of 25% outputs an output voltage (V_{out}) of 3.75V. Note that the maximum voltage is 5v and the minimum is 0V.