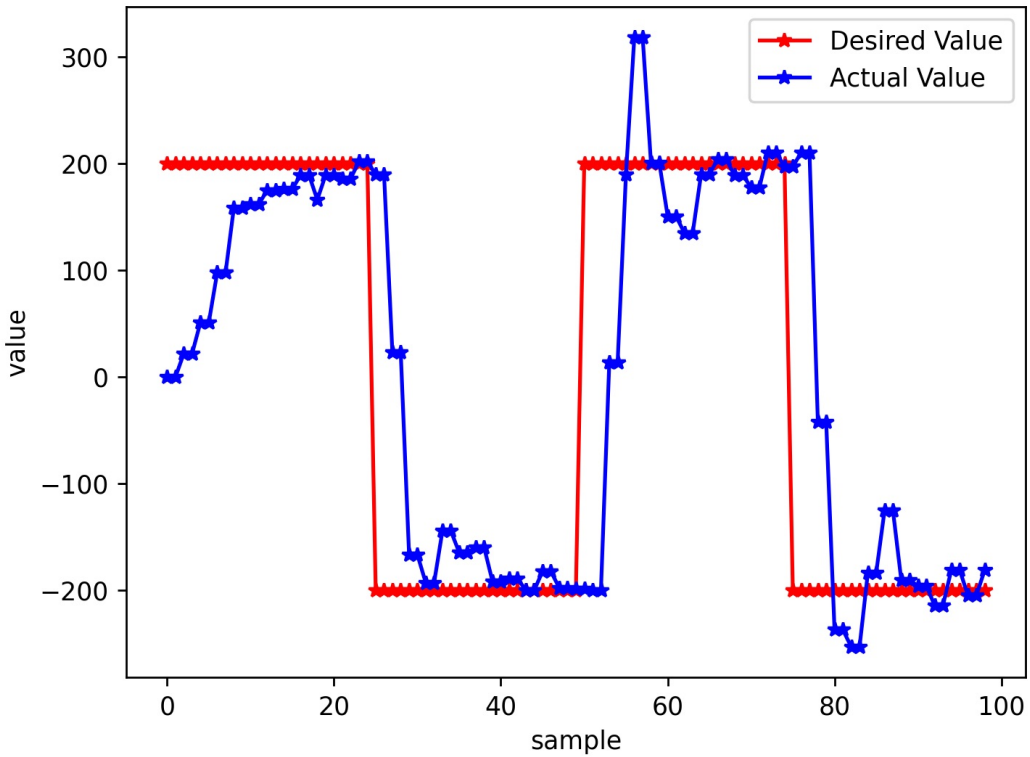


Score = 75.337

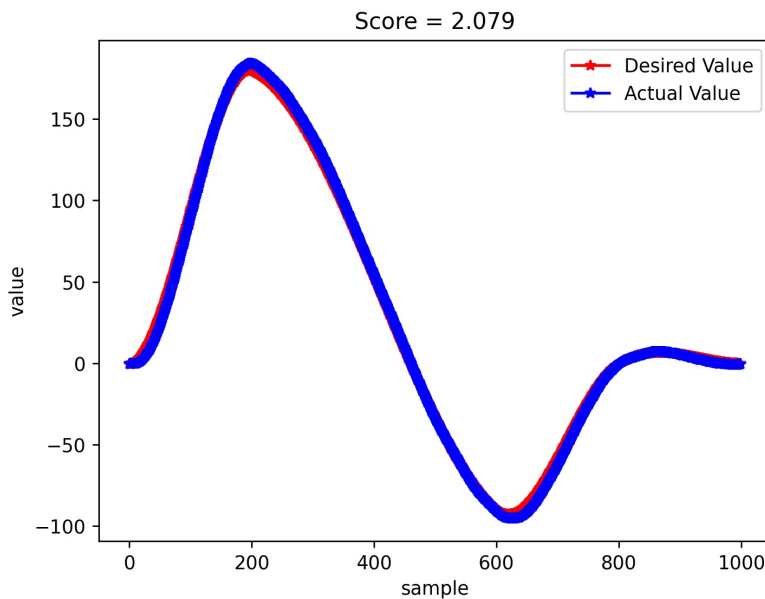
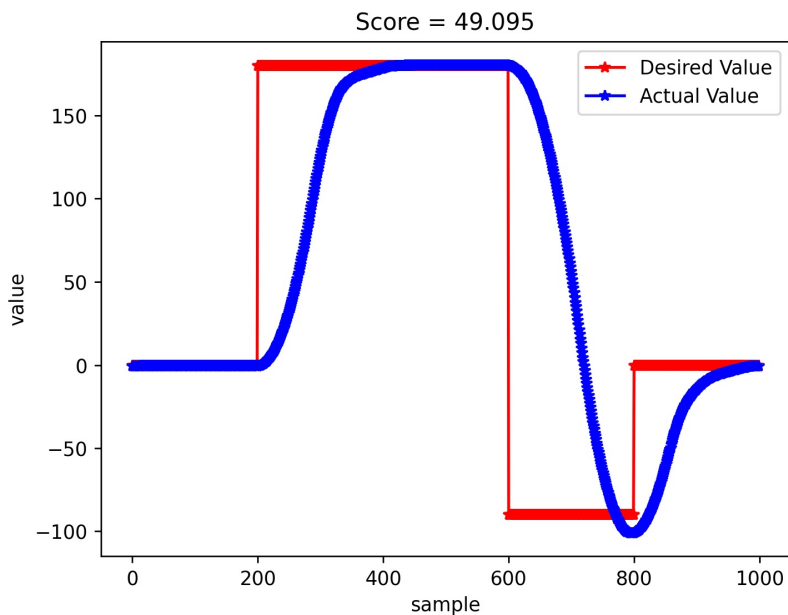


$$K_p = 0.0016, \quad K_i = 0.004, \quad E_{int\_max} = 2000$$

$$\text{Egs: } U = K_p \cdot E + K_i \cdot E_{int}, \quad E_{int} += E$$

$$[PWM] = [ \quad ] [mA] + [ \quad ] [mA] \quad [mA] \quad [mA] \quad \text{Note: No } \Delta T \text{ used}$$

$$K_p = \left[ \frac{PWM_{max}}{mA} \right], \quad K_i = \left[ \frac{PWM_{max}}{mA} \right], \quad E_{int\_max} = [mA]$$



$$K_p = 180, k_i = 0.1, K_d = 7000, E_{int,max} = 500$$

$$E_{qs}: U = k_p \cdot E + k_i \cdot E_{int} + k_d (E - E_{prev}), E_{int} += E$$

$$[mA] = [?][deg] + [?][deg] [?] [deg], [deg] [deg]$$

$$K_p = \left[ \frac{mA}{deg} \right], k_i = \left[ \frac{mA}{deg} \right], K_d = \left[ \frac{mA}{deg} \right], E_{int,max} = [deg]$$