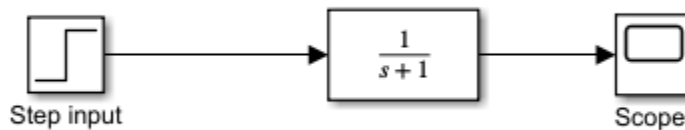


Lab 3: Understanding Open vs. Closed-Loop Systems without Controllers

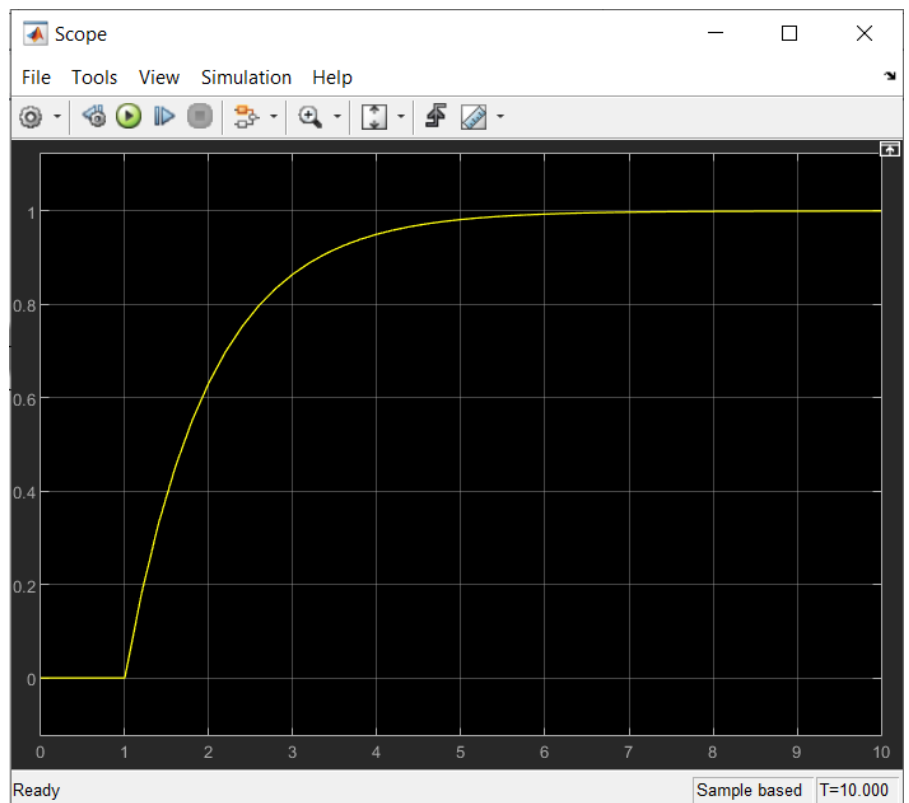
Part 1: Open-Loop System

Modeling of first order system:

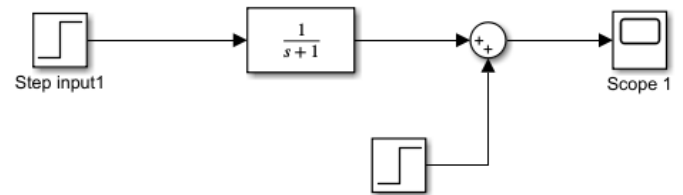


Step input response

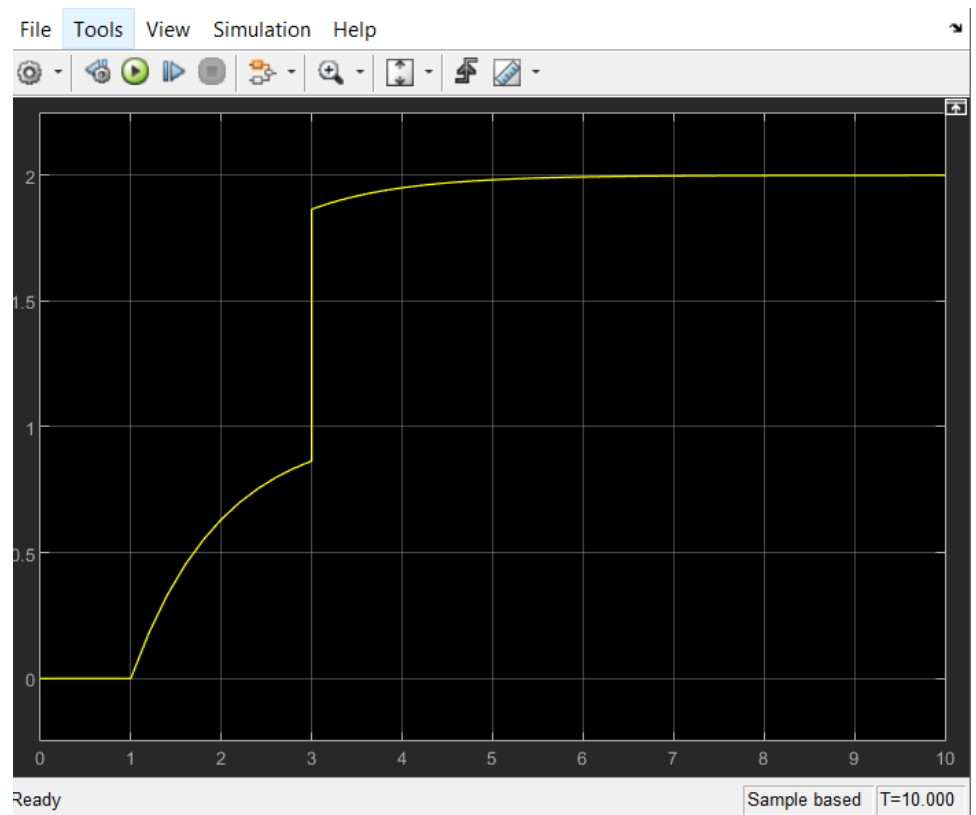
The steady state error = 0



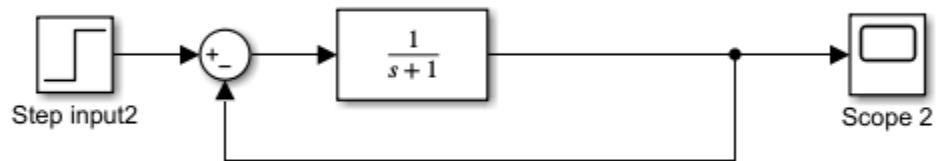
Effect of disturbance on the open loop:



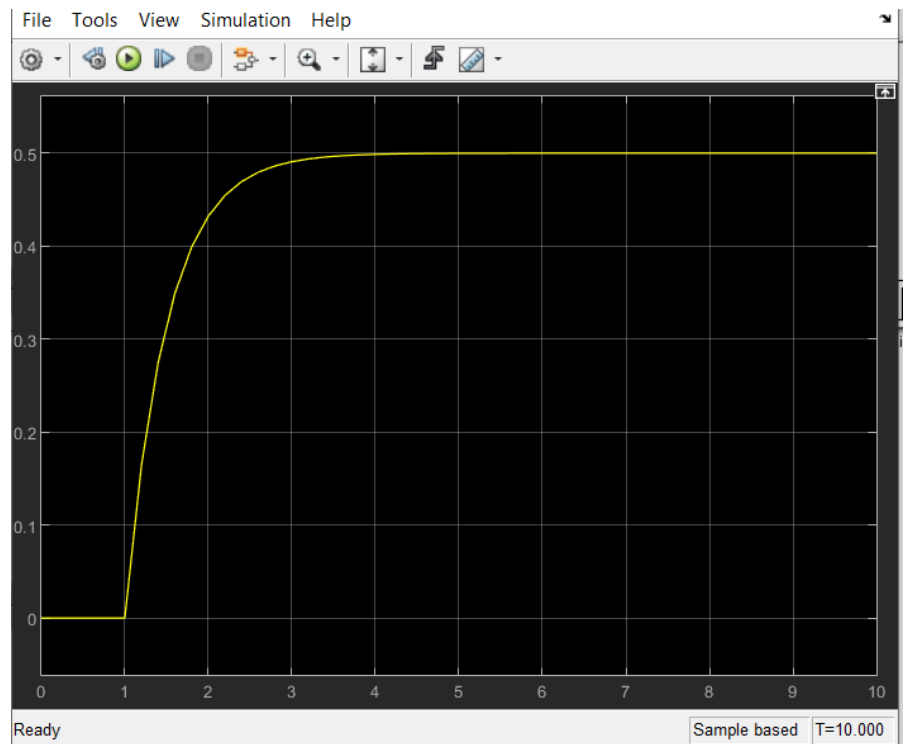
The open loop cannot resist the disturbance.



Part 2: Closed-Loop System



The steady state error is 50%.



But it can resist the disturbance

