ECED 4601 Digital Control Systems

Assignment #2

http://www.jasongu.org/4601/assignments.html

Due date: September 29, 2017. Late submission will not be accepted.

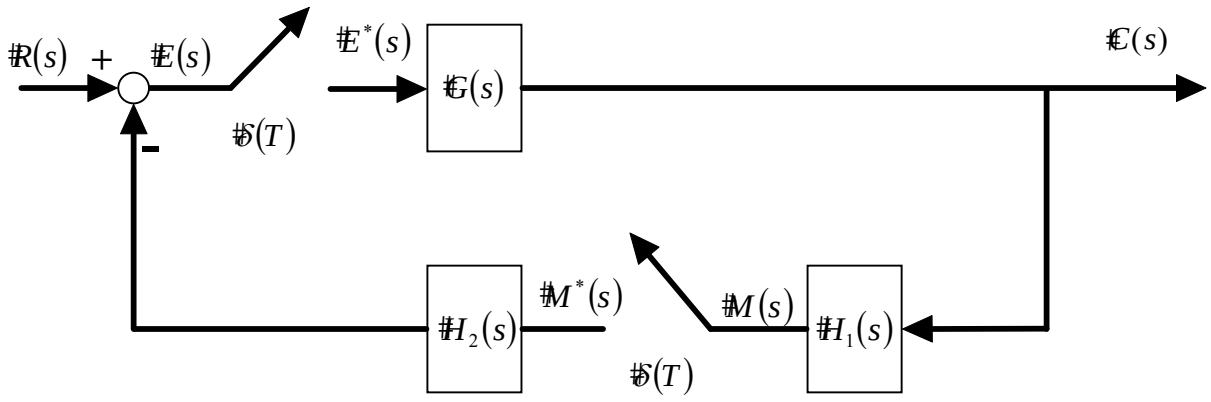
Assignment #2 contains the following problems:

1) Problem B-3-4: Consider a transfer function system
   $X(s) = \dfrac{(s+3)}{(s+1)(s+2)}$
   obtain the pulse transfer function by two different methods.

2) B-3-8: Consider the difference equation system

   $y(k+2) + y(k) = x(k)$, where $y(k) = 0$ *for* $k < 0$
   obtain the response $y(k)$ when the input $x(k)$ is a unit-step sequence. Also, obtain the Matlab solution.

3) B-3-15 Obtain the closed loop pulse transfer function of the system shown below



4) B-3-22
   assume that a digital filter is given by the following difference equation:
   $y(k) + a_1 y(k-1) + a_2 y(k-2) = b_1 x(k) + b_2 x(k-1)$
   draw the block diagram for the filter using 1) direct programming, 2) standard programming and 3) ladder programming.