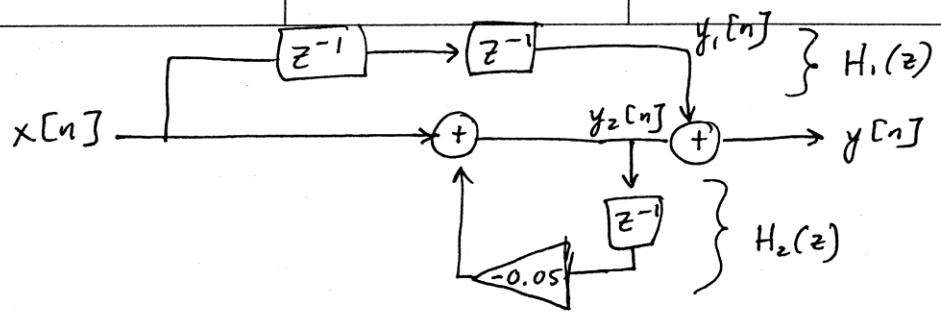

Note: parallel systems $H(z) = H_1(z) + H_2(z)$

$H_1(z) = \frac{Y_1(z)}{X(z)}$ $\quad y_1[n] = x[n-2]$

$Y_1(z) = z^{-2} X(z)$

$H_1(z) = \frac{Y_1(z)}{X(z)} = z^{-2}$

$H_2(z) = \frac{Y_2(z)}{X(z)}$ $\quad y_2[n] = x[n] - 0.05\, y_2[n-1]$

$y_2[n] + 0.05\, y_2[n-1] = x[n]$

$Y_2(z)(1 + 0.05 z^{-1}) = X(z)$

$$H_2(z) = \frac{Y_2(z)}{X(z)} = \frac{1}{1 + 0.05 z^{-1}}$$

$$H(z) = H_1(z) + H_2(z) = z^{-2} + \frac{1}{1 + 0.05 z^{-1}}$$

$$= \frac{z^{-2}(1 + 0.05 z^{-1}) + 1}{1 + 0.05 z^{-1}}$$

$$= \frac{1 + z^{-2} + 0.05 z^{-3}}{1 + 0.05 z^{-1}}$$

or $$= \frac{z^3 + z + 0.05}{z^3 + 0.05 z^2}$$