



$$M \ddot{y} = k(x_2 - y) + k(x_1 - y) - b \dot{y}$$

$$m \ddot{x}_1 = f_1 - k(x_1 - y)$$

$$m \ddot{x}_2 = -f_2 + k(x_2 - y)$$

$$\left. \begin{array}{l} m \ddot{x}_1 = f_1 - k(x_1 - y) \\ m \ddot{x}_2 = -f_2 + k(x_2 - y) \end{array} \right\} \begin{array}{l} f_{n1} = -k(x_1 - y) \\ f_{n2} = k(x_2 - y) \end{array}$$

You have to keep track of  $x_1, x_2, \dot{x}, \ddot{x}$  and  $y$ .  
But only  $y$  is used to compute error.