CS 460/560 Fall 2019 -- **MP 1**

Dhruvil Patel <dhp68>
Shawn Dowling <sd997>

Problem #2 (Part 1):

Q = $\begin{pmatrix} 10^{-4} & 2*10^{-5} \\ 2*10^{-5} & 10^{-4} \end{pmatrix}$ R = $\begin{pmatrix} 10^{-2} & 5*10^{-3} \\ 5*10^{-3} & 10^{-2} \end{pmatrix}$

The time update equations are:

$$\hat{x}_k^- = A\,\hat{x}_{k-1} + B\,u_{k-1}$$
$$P_k^- = AP_{k-1}A^T + Q$$

The measurement update equations are:

$$\hat{x}_k = \hat{x}_k^- + K_k(Z_k - H\hat{x}_k^-)$$
$$K_k = \frac{P_k^- H^T}{HP_k^- H^T + R}$$
$$P_k = (I - K_k H)\,P_k^-$$