$$\vec{x}(k) = \mathbf{A}\vec{x}(k) + \mathbf{B}\vec{u}(k) \qquad \vec{x}(0) = \vec{c}$$

$$\vec{x}(0) \qquad Evolution \ of \ the \ autonomous \ system$$

$$\vec{x}(k) \ \text{with} \ \vec{u}(k) = -\mathbf{K}(k)\vec{x}(k)$$

$$\vec{x}(k) \ \text{with} \ \vec{u}(k) = 0$$

$$Nt_s \qquad kt_s$$

$$\text{with} \ \mathbf{K}(k) \ \text{from} \ J = \frac{1}{2}\vec{x}^T(k)\mathbf{S}\vec{x}(k) + \sum_{k=0}^{N-1} \left[\vec{x}^T(k)\mathbf{Q}\vec{x}(k) + \vec{u}^T(k)\mathbf{R}\vec{u}(k)\right]$$

K(k) k = 0,1,...,N-1