

$$y(t) = b_0 x(t) + G x(t - T)$$

$$y(n) = b_0 x(n) + G x(n - N)$$

$$N = T * F_s$$

$$F_s = 16000 \text{ samples/sec}$$

$$T = 0.1 \text{ sec}$$

$$N = 1600 \text{ samples}$$

$$n = 0$$

$$[x(-4) \ x(-3) \ x(-2) \ x(-1)]$$

$$[0 \ 0 \ 0 \ 0]$$

$$n = 1$$

$$[x(-3) \ x(-2) \ x(-1) \ x(0)]$$

$$n = 2$$

$$[x(-2) \ x(-1) \ x(0) \ x(1)]$$

$$n = 3$$

$$[x(-1) \ x(0) \ x(1) \ x(2)]$$

$$\begin{array}{l} \text{buffer} = [0 \ 0 \ 0 \ 0] \\ n = 0 \end{array}$$

$$\begin{array}{l} \text{buffer} = [0 \ 0 \ 0 \ x(0)] \\ n = 1 \end{array}$$

$$\begin{array}{l} \text{buffer} = [0 \ 0 \ x(0) \ x(1)] \\ n = 2 \end{array}$$

$$\begin{array}{l} \text{buffer} = [0 \ x(0) \ x(1) \ x(2)] \\ n = 3 \end{array}$$

$$\begin{array}{l} \text{buffer} = [x(0) \ x(1) \ x(2) \ x(3)] \\ n = 4 \end{array}$$

Circular Buffer:

Initialization:

$$[0 \ 0 \ 0 \ 0]$$

$$n = 0$$

$$k = 0$$

$$[x(-4) \ x(-3) \ x(-2) \ x(-1)]$$

$$n = 1$$

$$k = 1$$

$$[x(0) \ x(-3) \ x(-2) \ x(-1)]$$

$$n = 2$$

$$k = 2$$

$$[x(0) \ x(1) \ x(-2) \ x(-1)]$$

$$n = 3$$

$$k = 3$$

$$[x(0) \ x(1) \ x(2) \ x(-1)]$$

$$n = 4$$

$$k = 0$$

$$[x(0) \ x(1) \ x(2) \ x(3)]$$

$$n = 5$$

$$k = 1$$

$$[x(4) \ x(1) \ x(2) \ x(3)]$$