

System Basics

Digital Signal Processing

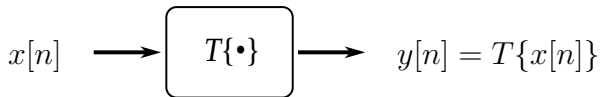
September 2, 2025



Definition

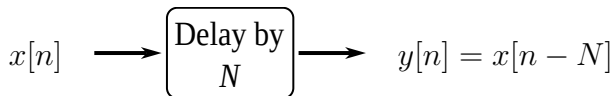
A **system** is a process that takes a signal as input and returns a signal as output.

Diagram for a system:



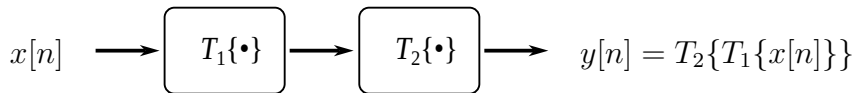
Ideal Delay

The ideal delay system shifts the signal to the right by N samples.

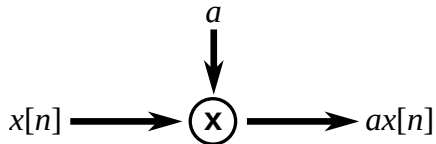


Cascaded Systems

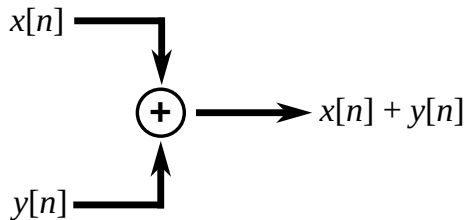
We can apply two systems in serial:



Multiplication



Addition



Example: Karplus-Strong

