# To-Determine-output-of-discrete-system-when-signal-is-applied

Given a discrete system for example this:

Diagram, schematic

Description automatically generated

We want to find out the output when a signal is applied to this system.

Steps in MATLAB:

1)read in the signal file using the *load* function.

**Input\_signal = load(…….)**

2) from the discrete system above, we can determine the *a* & *b* coefficients of the system.

3)use these coefficients to declare an array of *a* and *b* example:

**b =[-3.08 -0.87 3.08 -1.99];**

**a =[1 0.365 -0.371];**

4) last use the filter function to pass the input signal through the system and save to results to variable called *filtered\_signal* for future use.

**filtered\_signal = filter(b,a, Input\_signal)**