LAB 02: INSTRUCTOR GUIDE

Electrical Engineering 20N
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1 Case Structure

This exercise should be straightforward. The only note is to make sure the string control is wired before adding the default case. In addition, LabVIEW treats ‘enter’ key as one of the ASCII code, so make sure the entered string doesn’t end with ‘enter.’ If so, restart the VI to get the correct output.

2 Arrays

The only thing about this exercise is the ‘i + 1’ issue. In addition, ‘i’ should be outputted as ‘disabled auto-indexing’ to get the last i.

3 Arrays (Self-Exercise)

![Diagram of an array operation]

4 Array Manipulation

Note:

1. For the False case, the input array should be directly wired to the output array (shift register to shift register). The VI would not work without this operation.

2. The Insert button should be an OK button instead of a normal Boolean control.
5 Waveform Generation

The waveform graph can only be called from the front panel. The default indicator for the Build Waveform block is not the waveform graph.

Suggested Check-Off Questions

1. In Array Average.vi, what happens if we remove the incremental block? (Off-by-one error.)

2. For the same VI, why can we use the iteration terminal to determine the size of the array? Doesn’t the value of i fluctuate as the VI runs? (No, because data leaves the outgoing tunnel only at the very end. At that point, i + 1 already has the size of the array as its value.)

3. For the same VI, what happens if we enable auto-indexing? (You would be trying to divide by an array.)

4. In Build Array.vi, what happens if you do not wire the output for the False case? (The block diagram would be broken and would not run.)

5. For the same VI, what happens if you do not apply While Loop but click Run Continuously in the front panel instead? (There would not be a way to change the elements in the array, and the array would get reset each time.)

6. What would happen if you passed an array through an outgoing tunnel with auto-indexing enabled? (We would get a two-dimensional array, where each element of the array is an array itself.)