

# LabVIEW – Basics II



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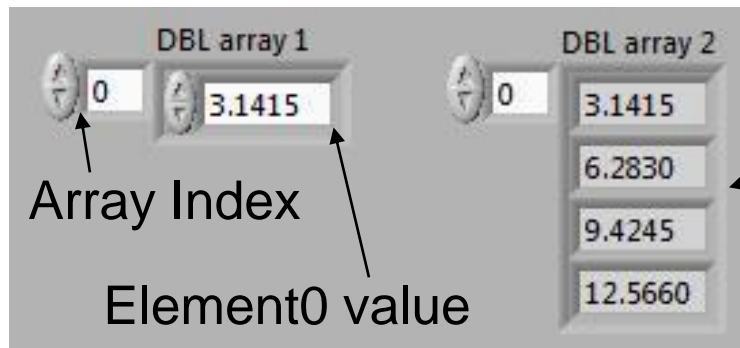


# Arrays I

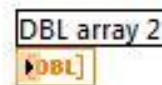
- An Array is a collection of like data-types

[13, 8, 1, 5, 7] element0 is 13, element1 is 8, element2 is 1...

[start, end, **Channel 2 selected**] element0 is 'start', element1 is 'end'...



Array can be dragged to display more elements



# Arrays II

- Arrays can hold any data type (subject to a few limitations)
- Arrays start at index 0
- Many functions to operate on arrays:  
insert into, delete from, replace items, find size, max/min, sort, threshold, reverse etc
- Can use mathematical operators to operate on each element of array



# Strings

- A String is a collection of characters
- Many functions to operate on strings
  - Concatenate; search; replace
  - Find patterns
  - Convert to/from numeric and timestamp types etc
- First character in string is at position 0
- Similar in operation to an Array

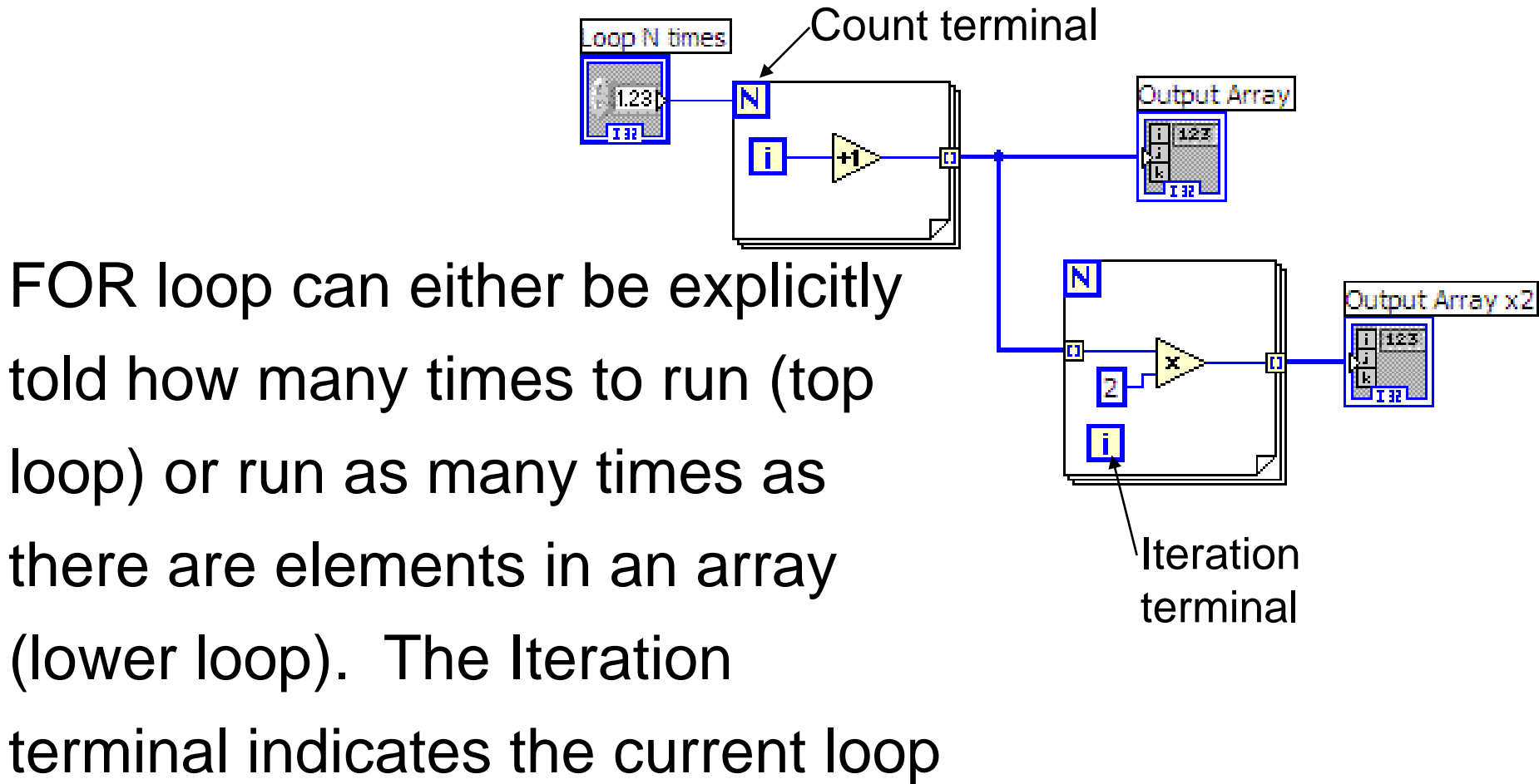


# Structures

- Structures are used for repetitive tasks (FOR and WHILE loops), to make choices (CASE structure) or to do tasks in a particular order (SEQUENCE structure)
- FOR and WHILE loops are useful to operate on, or to build, arrays
- CASE structures can make decisions
- All Structures can be 'nested'

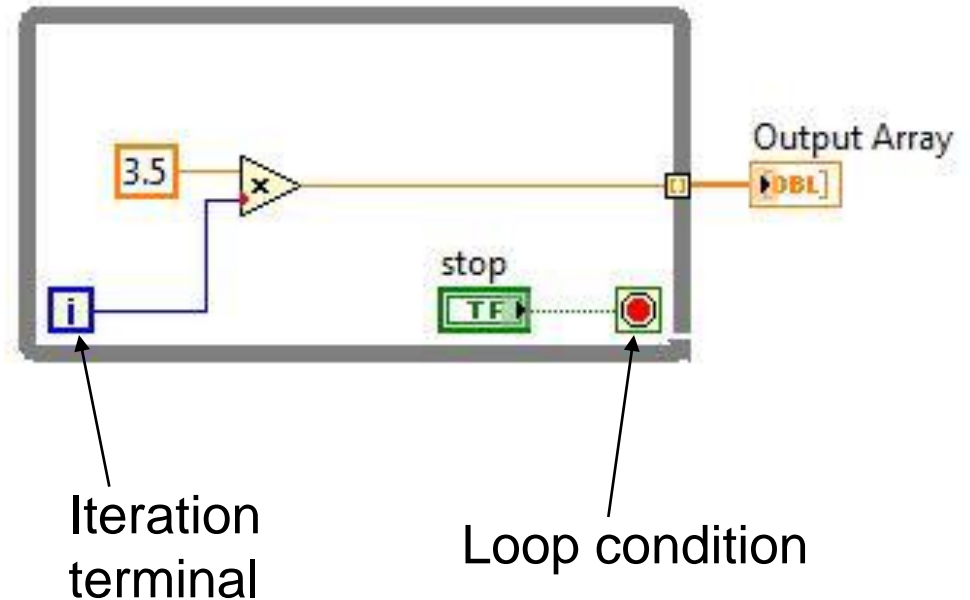


# FOR Loop

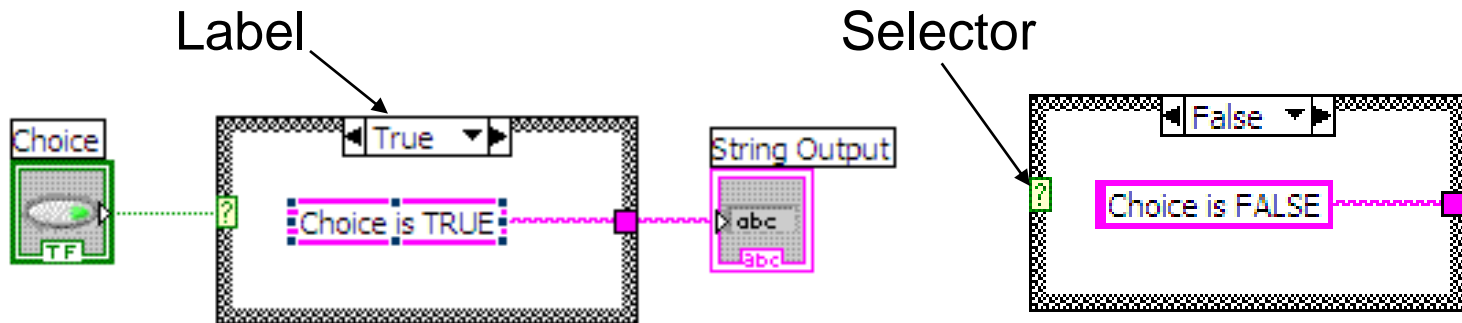


# WHILE Loop

The WHILE loop will run until told to stop (in this case by a 'stop' button on the front panel). The loop condition can also be configured to stop unless told to continue



# CASE

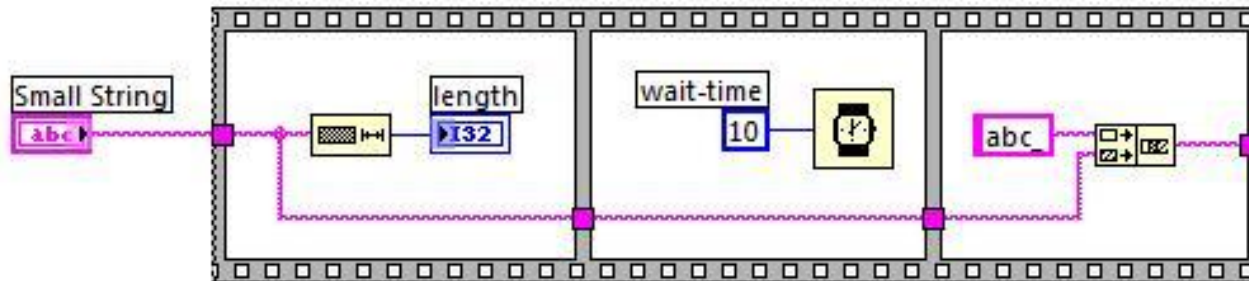


The 'choice' boolean selects either the true or false case. The selected case will execute but not the other.





# SEQUENCE



The SEQUENCE structure contains frames that execute sequentially. Frames execute from Left to Right.

**SEQUENCE structures should be used sparingly, if at all!**

