H006
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Signal Processing Lab

Subject- Virtual Instrumentation

EXPERIMENT NO. 7

Aim: Create a VI to compare cluster and switch on an LED in the output cluster, if the nth element of the cluster 1 is greater than nth element of cluster 2

Software Used : PC with software (NI LabVIEW)

Theory:
In LabVIEW, a cluster is a composite data type that groups together a set of related data elements. It is similar to a structure in other programming languages.

A cluster consists of a cluster icon, which represents the entire cluster, and one or more elements, which represent the individual data elements within the cluster. Each element in the cluster has a unique label, which is used to identify the data element within the cluster.

Clusters can be created by selecting the "Cluster" option from the "Numeric" or "Boolean" palette in the LabVIEW block diagram. Once the cluster is created, you can add elements to it by dragging and dropping them onto the cluster icon. You can also resize the cluster icon to accommodate additional elements.

Clusters are commonly used in LabVIEW to group related data elements together, such as the x and y coordinates of a point, or the voltage and current values of a signal. They are also used to pass multiple values between different parts of a LabVIEW program.

To access the individual elements within a cluster, you can use the "Unbundle" function, which extracts the individual elements from the cluster and returns them as separate outputs. Conversely, you can use the "Bundle" function to combine multiple data elements into a cluster.

In summary, clusters in LabVIEW are a powerful tool for organizing and manipulating related data elements. They allow you to group multiple data elements together into a single composite data type, which can simplify your code and make it easier to work with complex data structures.

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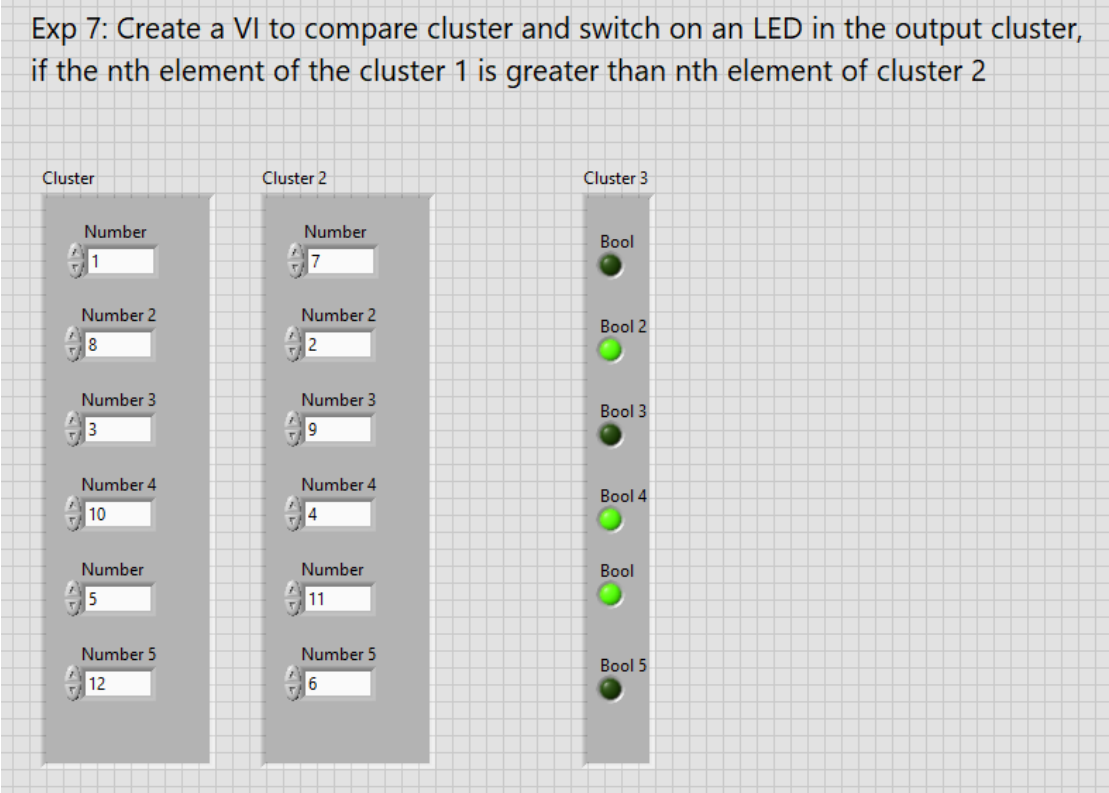
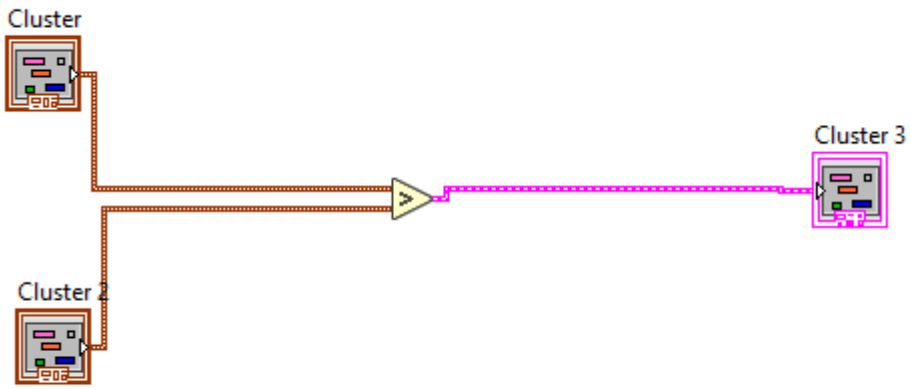
Front Panel:



Block Diagram:



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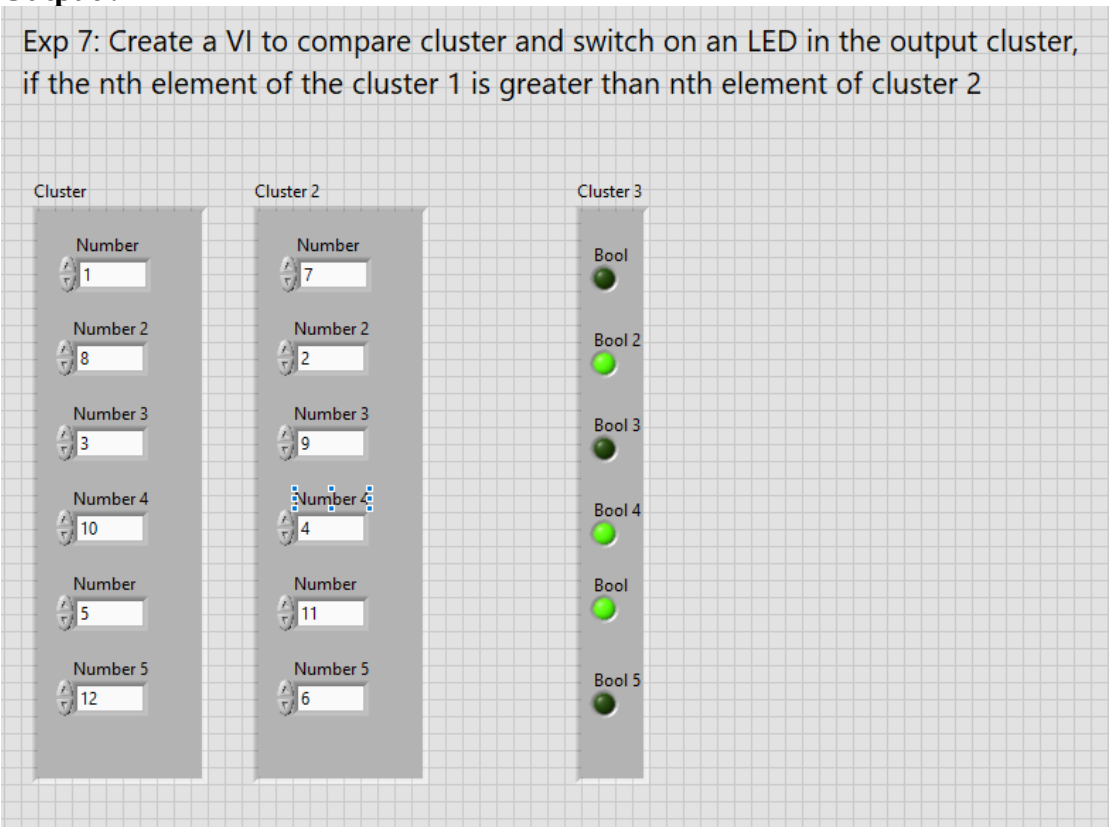
Output :



Conclusion: The experiment was successfully performed in LabView.