LabVIEW Wires and Variables Example

**Description:** In text-based programming languages, you store and access data with functions through the use of variables. In the LabVIEW graphical programming language, wires implicitly handle all of the data storage and access that are associated with variables in text-based languages. Think of wires as a path for data to flow. Data comes into block diagram objects through a wire and can leave only through a wire. Local (or Global) Variables are used to pass data when a wire in some situations cannot be used.

**Task:** **Wires:** Create a program where you use **Wires** and **Shift Registers** to update data as shown below.

![LabVIEW Wire Diagrams](image)

**Task:** **Local Variables:** The Local Variable item is located on the Structures palette on the Block Diagram.

![Local Variable Block Diagram](image)

When you place a Local variable on the Block Diagram, it looks like a Question mark as seen below. Then you right-click on the Local variable and choose “Select Item” and select which Control/Indicator you want to connect it to. Another way to create a local variable is to right-click on a Control/Indicator either on the Front Panel or the Block Diagram and select “Create → Local Variable”.

![Local Variable Creation](image)

**Task:** Create the same program as in the previous task and use Local Variables instead.
**Task:** Global Variables: Use global variables to access and pass data among several VIs. When you create a global variable, LabVIEW automatically creates a special global VI, which has a front panel but no block diagram. The Global Variable item is located on the Structures palette on the Block Diagram. When you place a Local variable on the Block Diagram, it looks like a Question mark with a globe, as seen above. Double-clink on the item in order to create the Global Variable.

**Task:** Create 2 VIs that uses a Global variable to exchange data between them. Example: