

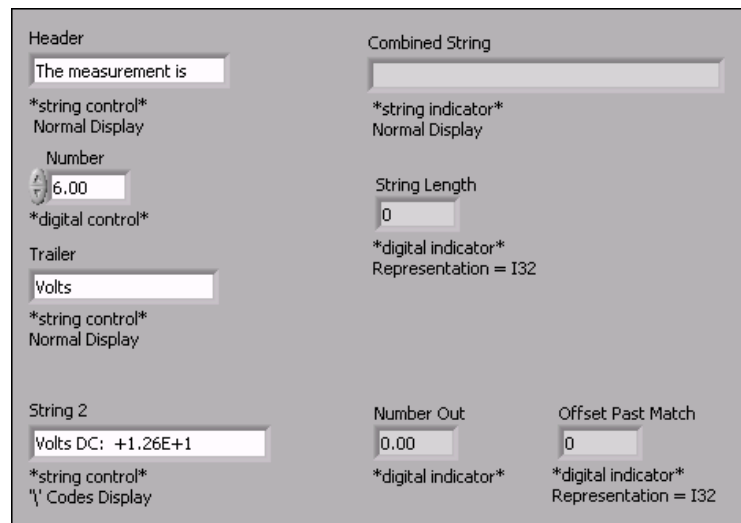
## Exercise 7-1 Build String VI

**Objective:** To use the **Format Into String**, **Concatenate Strings**, and **String Length** functions.

Complete the following steps to build a VI that converts a numeric to a string, concatenates the string to other strings to form a single output string, and determines the output string length. The VI also matches a pattern in a string and converts the remaining string to a numeric.

### Front Panel

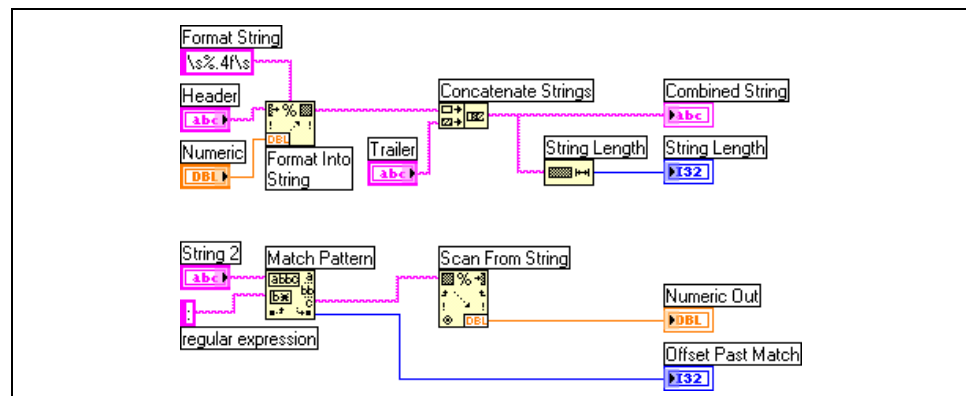
1. Open a new VI and build the following front panel.



- a. Right-click **String 2** and select ‘\’ Codes Display from the shortcut menu.
- b. Change **String Length** and **Offset Past Match** to I32 representation.

### Block Diagram

2. Build the following block diagram.





- a. Place the Format Into String function located on the **Functions»String** palette. This function converts **Numeric** to a string.
- b. Right-click the Format Into String function and select **Edit Format String** from the shortcut menu to display the **Edit Format String** dialog box.
- c. Place a checkmark in the **Use specified precision** checkbox and type 4 in the corresponding text box to create a **format string** that converts **Numeric** to a string with four digits after the decimal point.
- d. Click the **OK** button. LabVIEW creates a **format string** of `% . 4 f` using the options you selected.
- e. Use the Labeling tool to type a space on either side of the `% . 4 f` constant and press the <Shift-Enter> keys so **Numeric** will appear with spaces on either side in **Combined String**.



- f. Right-click the constant and select '**\** Codes Display' from the shortcut menu. The spaces you typed change to `\s`.
- g. Place the Concatenate Strings function located on the **Functions»String** palette. This function concatenates input strings into a single output string.



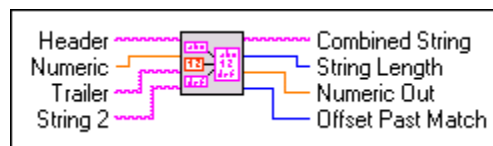
- h. Place the String Length function located on the **Functions»String** palette. This function returns the number of characters in **Combined String**.



- i. Place the Match Pattern function located on the **Functions»String** palette. This function searches **String 2** for a colon.
- j. Right-click the **regular expression** input terminal, select **Create»Constant** from the shortcut menu, type a colon (`:`), and press the <Shift-Enter> keys.



- k. Place the Scan from String function located on the **Functions»String** palette. This function converts the string after the colon to a numeric.
3. Display the front panel and create the following icon and connector pane so you can use the VI as a subVI later in this course. Refer to Lesson 3, *Creating a SubVI*, for more information about creating icons and connector panes.



4. Save the VI as `Build String.vi` because you will use this VI later in the course.
5. Change the values of the front panel controls and run the VI.

The VI concatenates **Header**, **Numeric**, and **Trailer** into **Combined String** and displays the string length.

The VI also searches **String 2** for a colon, converts the string following the colon to **Numeric Out**, and displays the index of the first character after the colon in **Offset Past Match**.

6. Save and close the VI.

## End of Exercise 7-1