

Chapter 6. File Input and Output (File I/O)

File I/O operations pass data to and from files.

The file I/O functions and VI are located at Programming/File I/O palette. Using File I/O to perform:

- Write/Read data to/from text file.
- Write/read data to/from spreadsheet file.
- Write/Read data to/from LabVIEW measurement file in text (.lvm) or binary formation (.tdm)

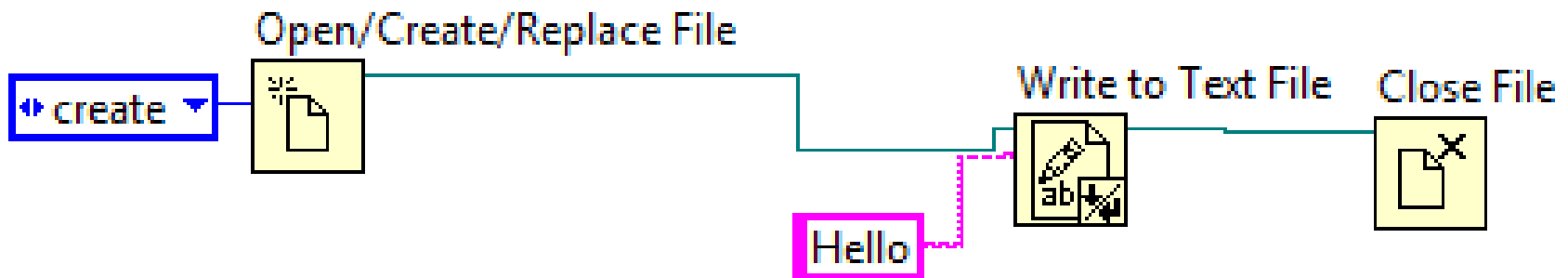
LabVIEW save **data as String**. To write a numeric data, it must be convert to string.

6.1 Write/Read data to/from text file

Write data to a text file: you can use the following functions to write data to a file (Functions>>Programming>>File I/O):

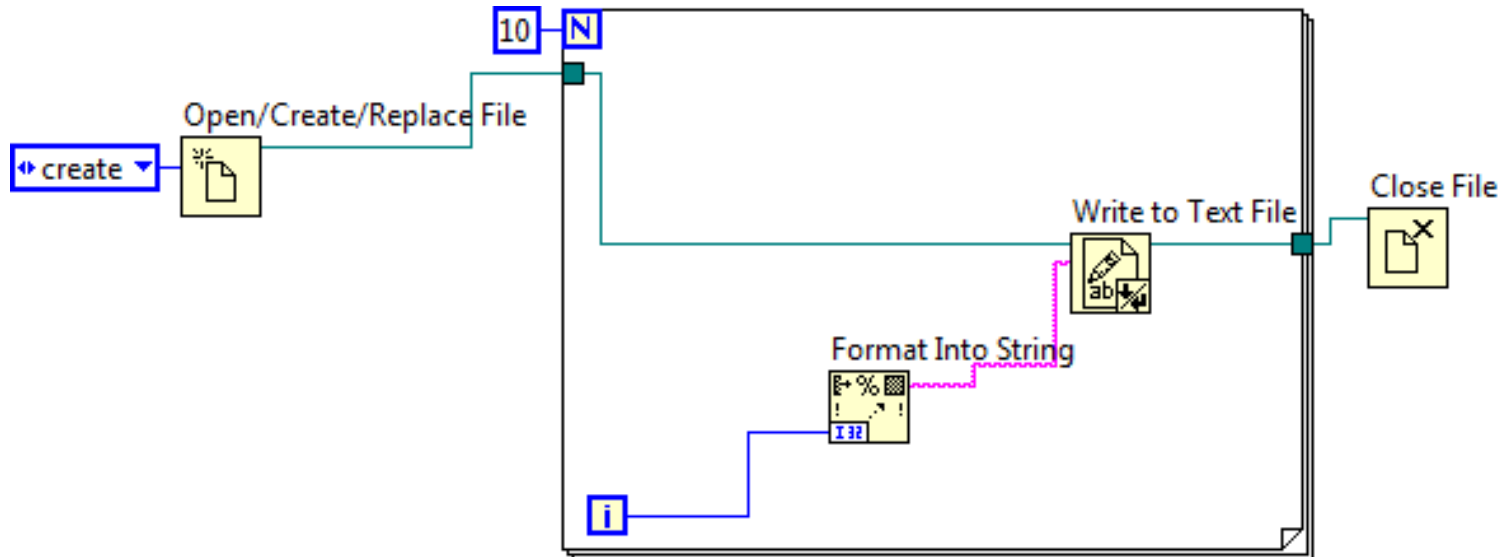
- Open/Create/Replace File
- Write to Text File
- Close File (release the memory)

The following codes write a “Hello” string to a file



Assignment 1

Write the following code to create a code that contains the numerical data 0, 1,2, ..., 9. To check the data, you can open this data file with a text editor.

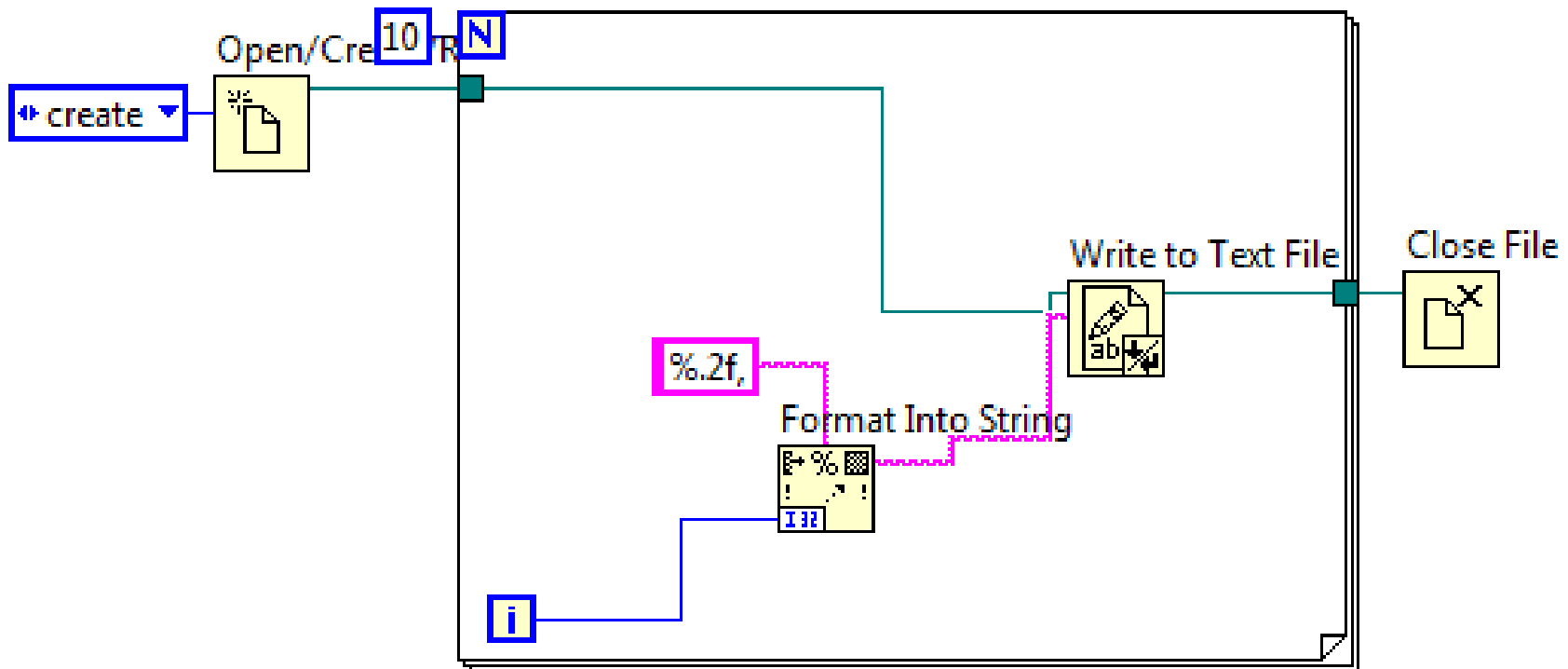


What is the For Loop Auto-Index?

When you write the refnum out of the For Loop, **auto-index** is enabled by default. In order to wire the refnum to the Close File function properly, you need to select **Disable Index** (by right-click the tunnel).

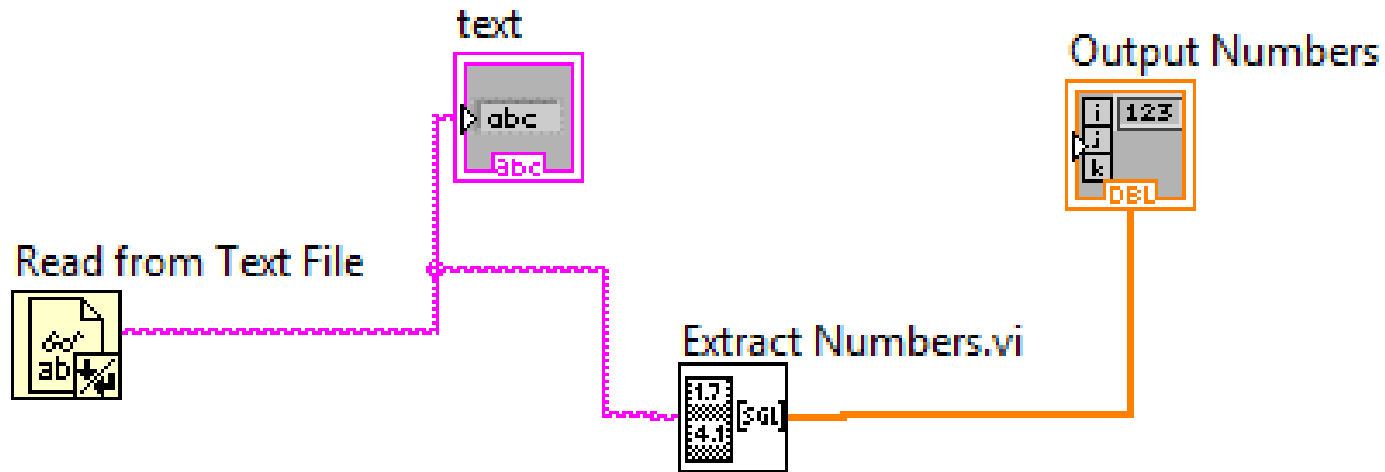
Assignment 2

Write the following code to create a code that contains the numerical data 0, 1, 2, ..., 9. To check the data, you can open this data file with a text editor. What is the different with the Assignment 1?



Assignment 3

Write the following code to read the data that just created by Assignment 2. You need to use the “Extract Numbers” SubVI that is located at `.../examples/general/strings.lib`



6.2 Write/Read Data to/from Spreadsheet File

In many instances, it is useful to be able to open and save data in a spreadsheet.

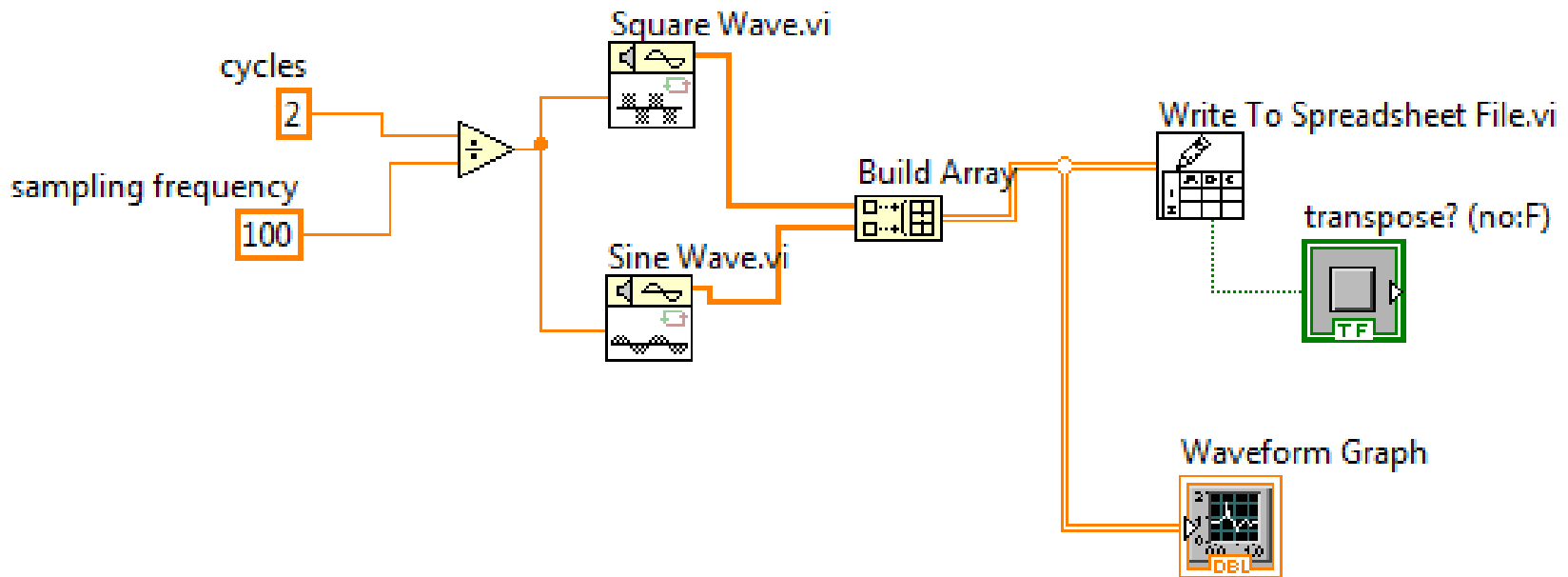
Such data is readable and can be accessed by using a text-based spreadsheet program outside the LabVIEW. In this Section, we will study how to write LabVIEW codes that can create and read the spreadsheet files.

You can use two Sub-VIs to write and read Spreadsheet files (Functions>>Programming>>File I.O):

- [Write to Spreadsheet File.vi](#)
- [Read from Spreadsheet File.vi](#).

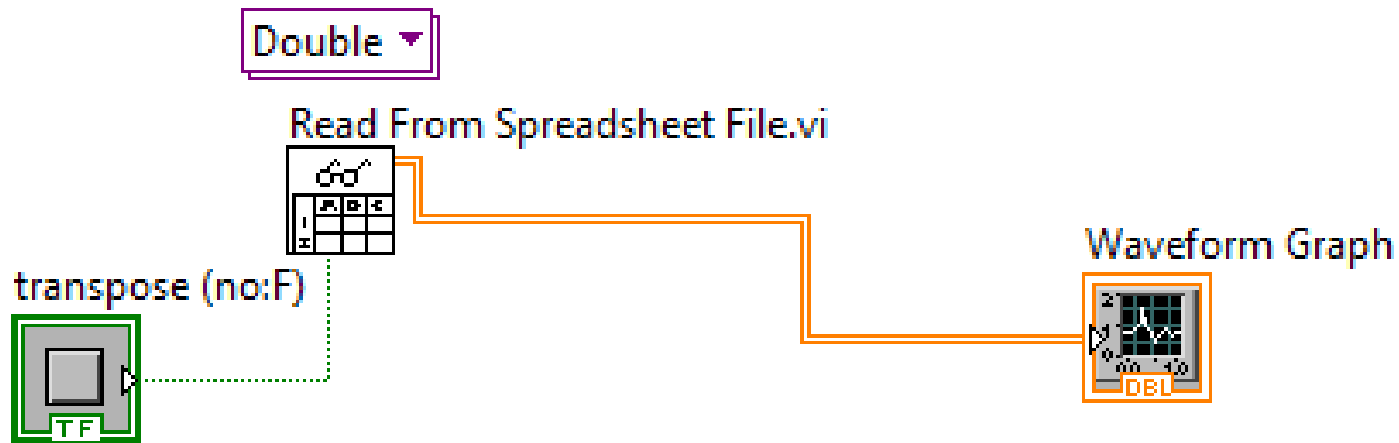
Assignment 4 writing 2-D arrays to a file

Write the following code to create a code that contains the numerical signals from Square and Sine Waves. The code write **2-D arrays** to a file. To check the data, you can open this data file with a text editor. Using helps to understand each function correctly.



Assignment 5

Write the following code to read the data that just created by Assignment 4. Compared with the data in Assignment 4, have you recovered the data correctly?



6.3 Write/Read data to/from LabVIEW Measurement Data File

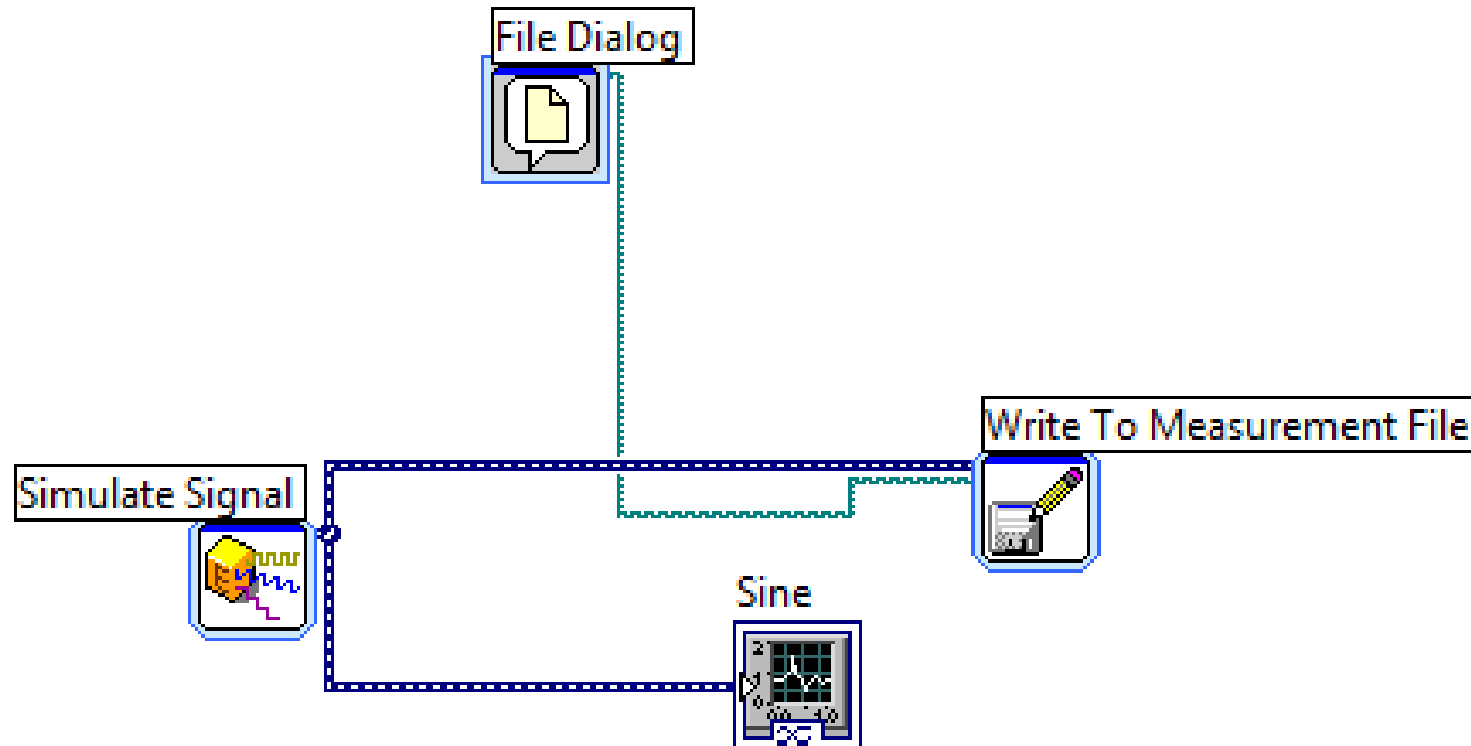
You may find it necessary to permanently store data from your DAQ (data acquisition) device. You can write and read such LabVIEW measurement data files (.lvm). The measurement data file (.lvm) is a tab-delimited text file that can be opened with other test-editing applications.

You can use the two functions to create and read a measurement data file (Functions>> Programming>>File I/O):

- Write to Measure File
- Read to Measure File

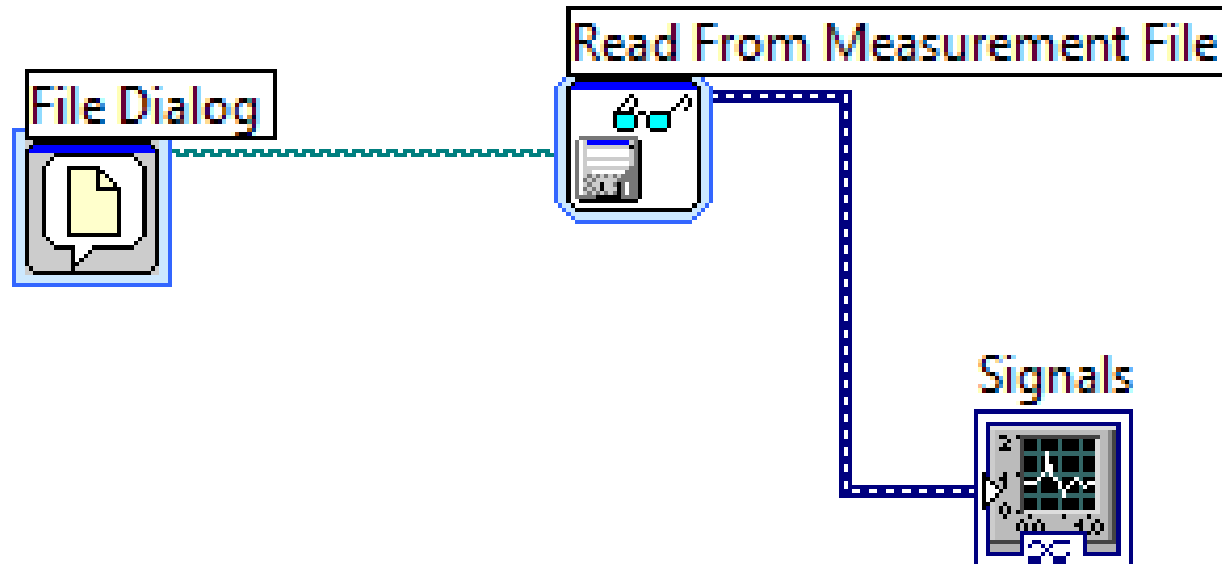
Assignment 6

Write the following code that simulates a DAQ device to create a Sine Signal. The code write the signal to a Measurement Data File (.lvm). To check the data, you can open this data file with a text editor. Using helps to understand each function correctly.



Assignment 7

Write the following code to read the data that you have created in Assignment 6. Compared with the data with the Assignment 6, have you recovered the data correctly?



Assignment 8

Download the VI file “Read-a-vi file”, and run this vi file. Open the AVI file “SideCrash2.avi” located at the directory “National Instruments/Vision/Examples/Images/AVIs”.

Then use the “tick count” function to calculate how much time need to show the avi file.