Modularity (SubVIs)

MEMS 1049 Mechatronics

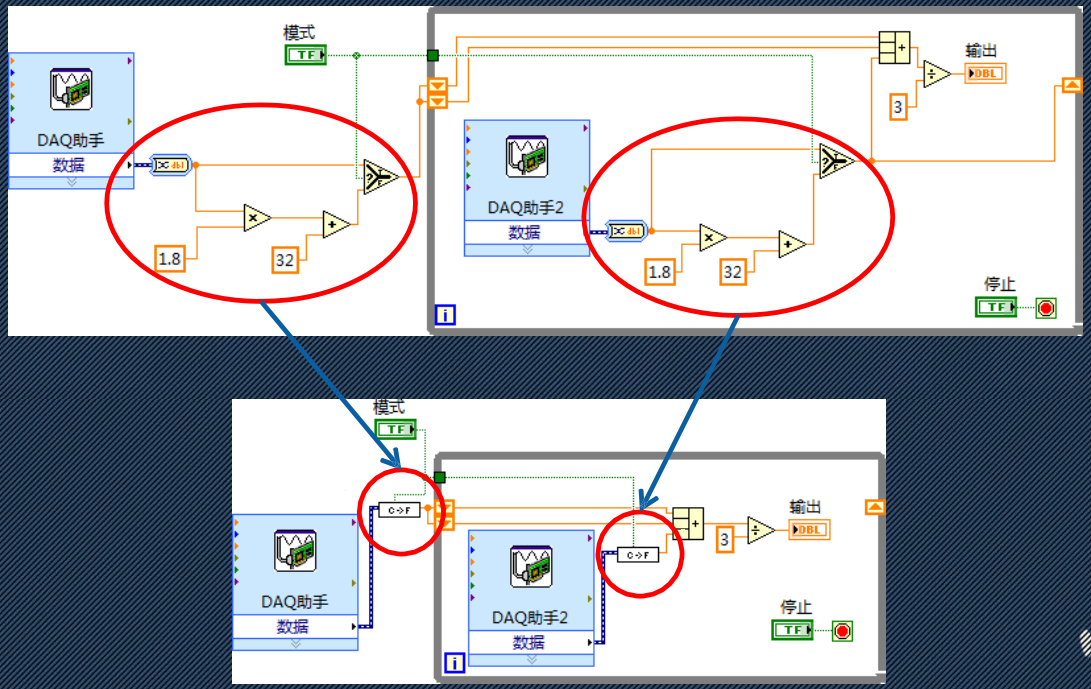
四川大學 匹兹堡学院

Outline

- What is SubVI?
- Create a LabVIEW SubVI
- SubVI Icon and Connector Pane
- Place subVI

SubVI

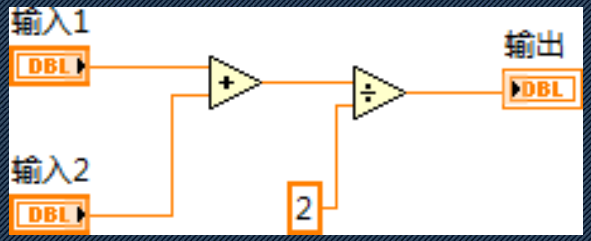
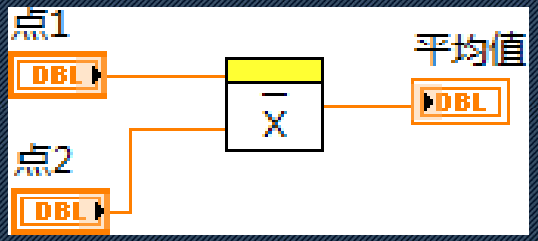
- Code Reuse



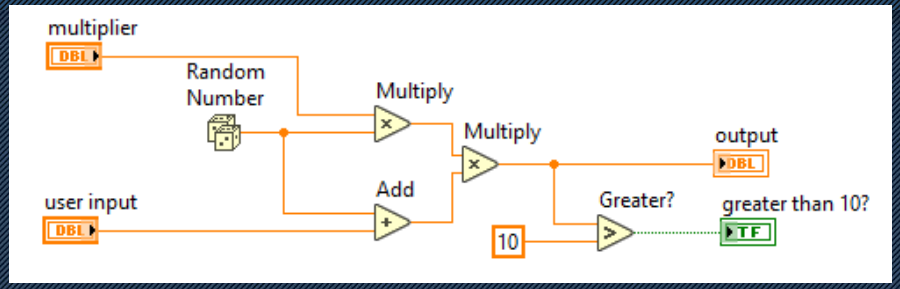
SubVI

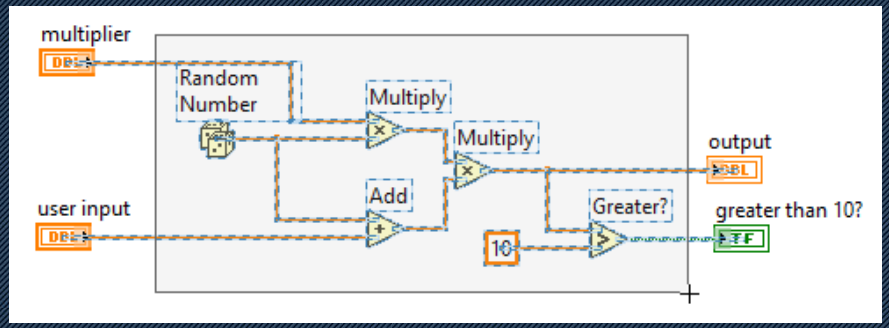
Function Code	Function Calling Code

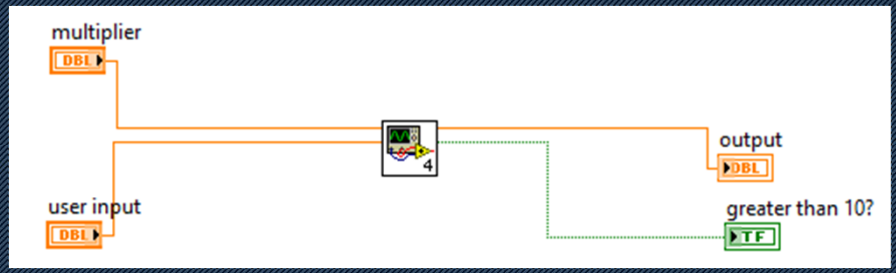
function average (in1, in2, out)
{
out = (in1 + in2)/2.0;
}
	main
	{
	average (point1, point2, pointavg)
	}

Sub VI Block Diagram	Sub VI Calling Block Diagram
	

Create a LabVIEW SubVI

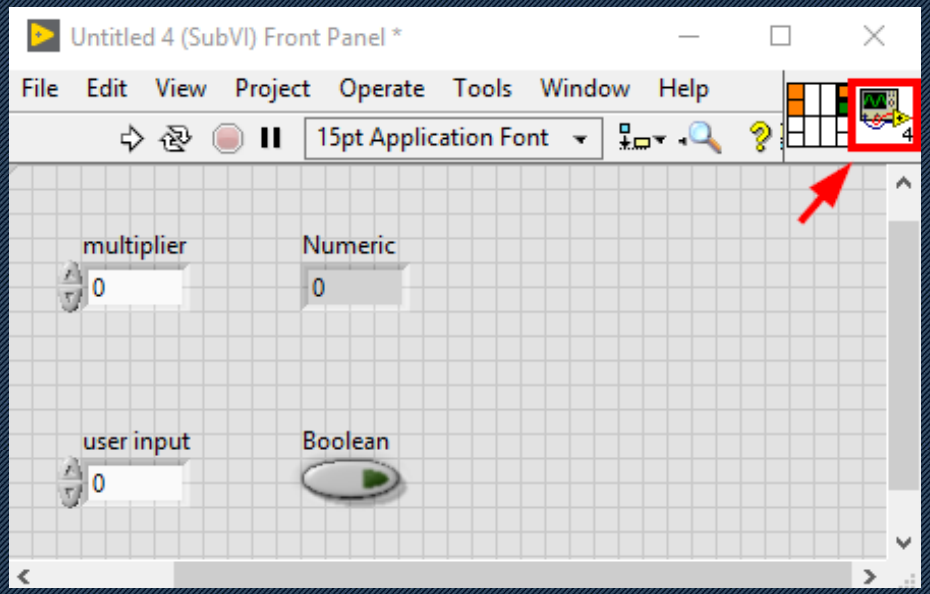


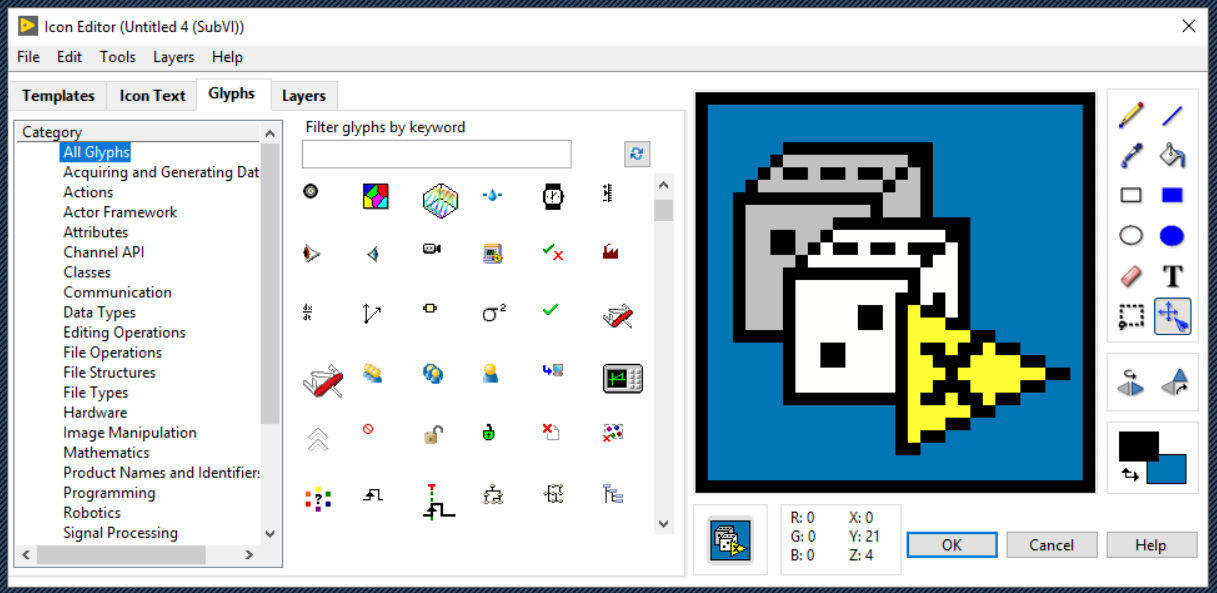




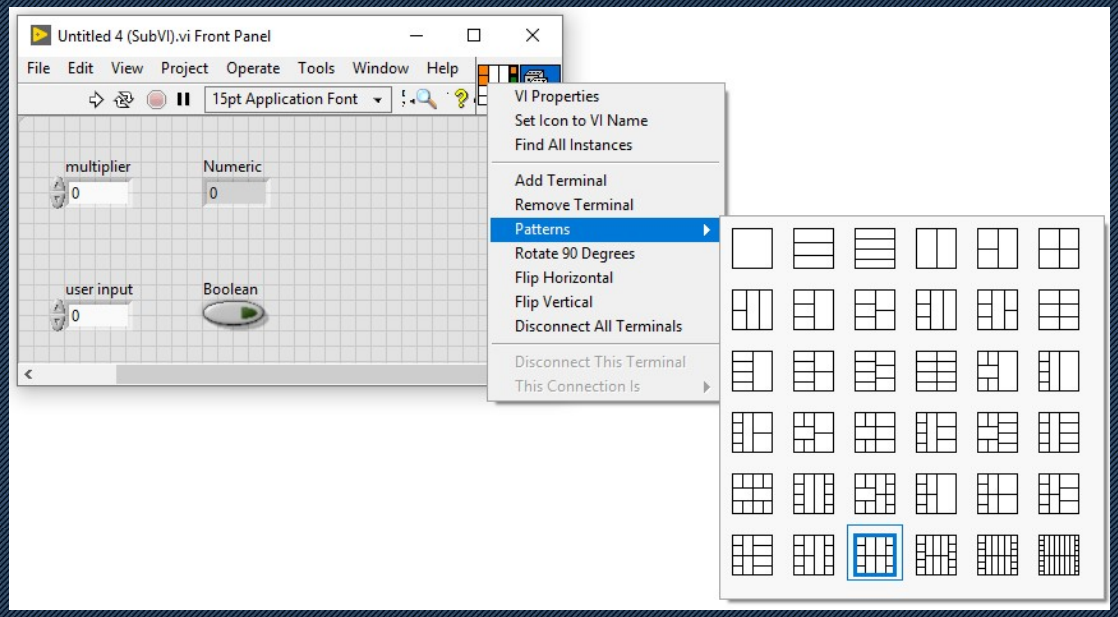
From the Edit menu, select Create SubVI to create a subVI from your selection

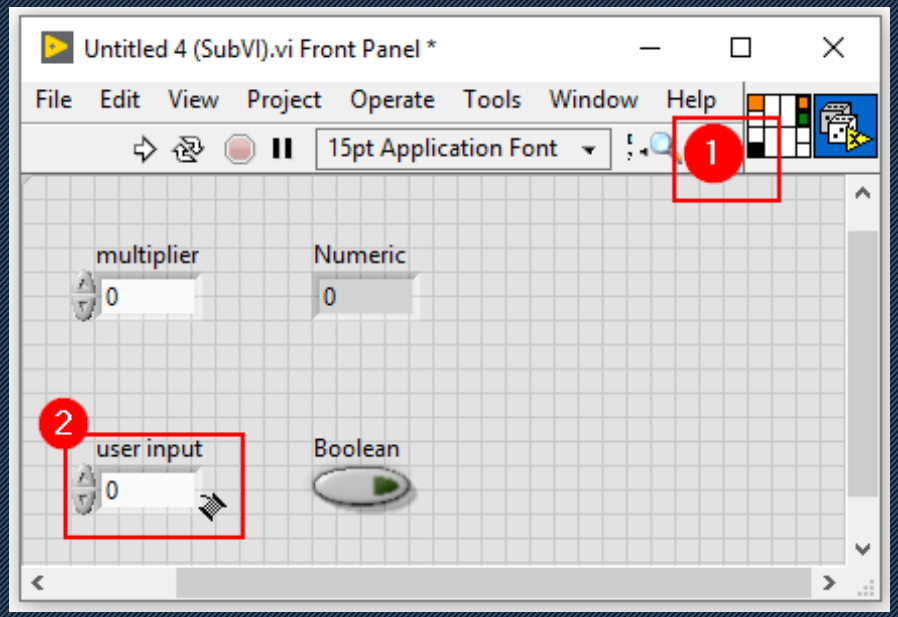
SubVI Icon


Untitled 4 (SubVI) Front Panel *
File Edit View Project Operate Tools Window Help
15pt Application Font
multiplier
0
Numeric
0
user input
0
Boolean


Icon Editor (Untitled 4 (SubVI))
File Edit Tools Layers Help
Templates
Icon Text
Glyphs
Layers
Category
All Glyphs
Acquiring and Generating Dat
Actions
Actor Framework
Attributes
Channel API
Classes
Communication
Data Types
Editing Operations
File Operations
File Structures
File Types
Hardware
Image Manipulation
Mathematics
Product Names and Identifier
Programming
Robotics
Signal Processing
Filter glyphs by keyword
R: 0
G: 0
B: 0
X: 0
Y: 21
Z: 4
OK
Cancel
Help

Build the Connector Pane

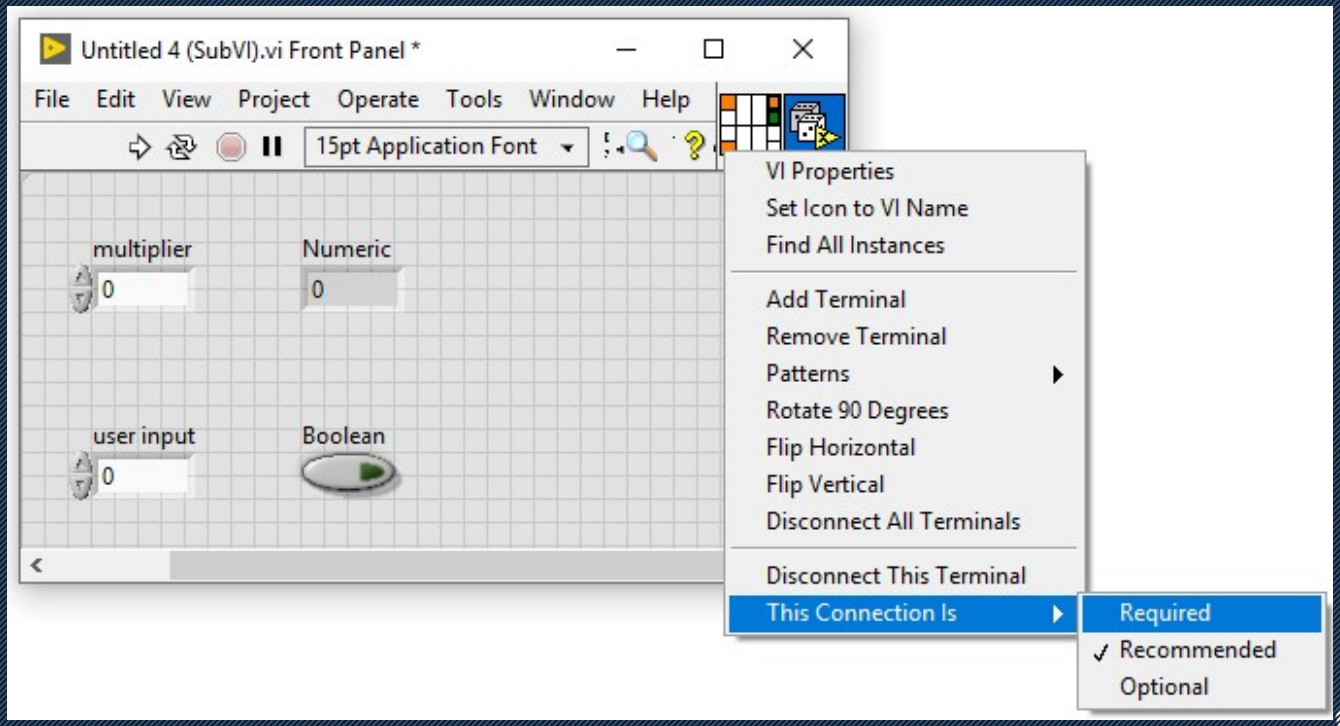




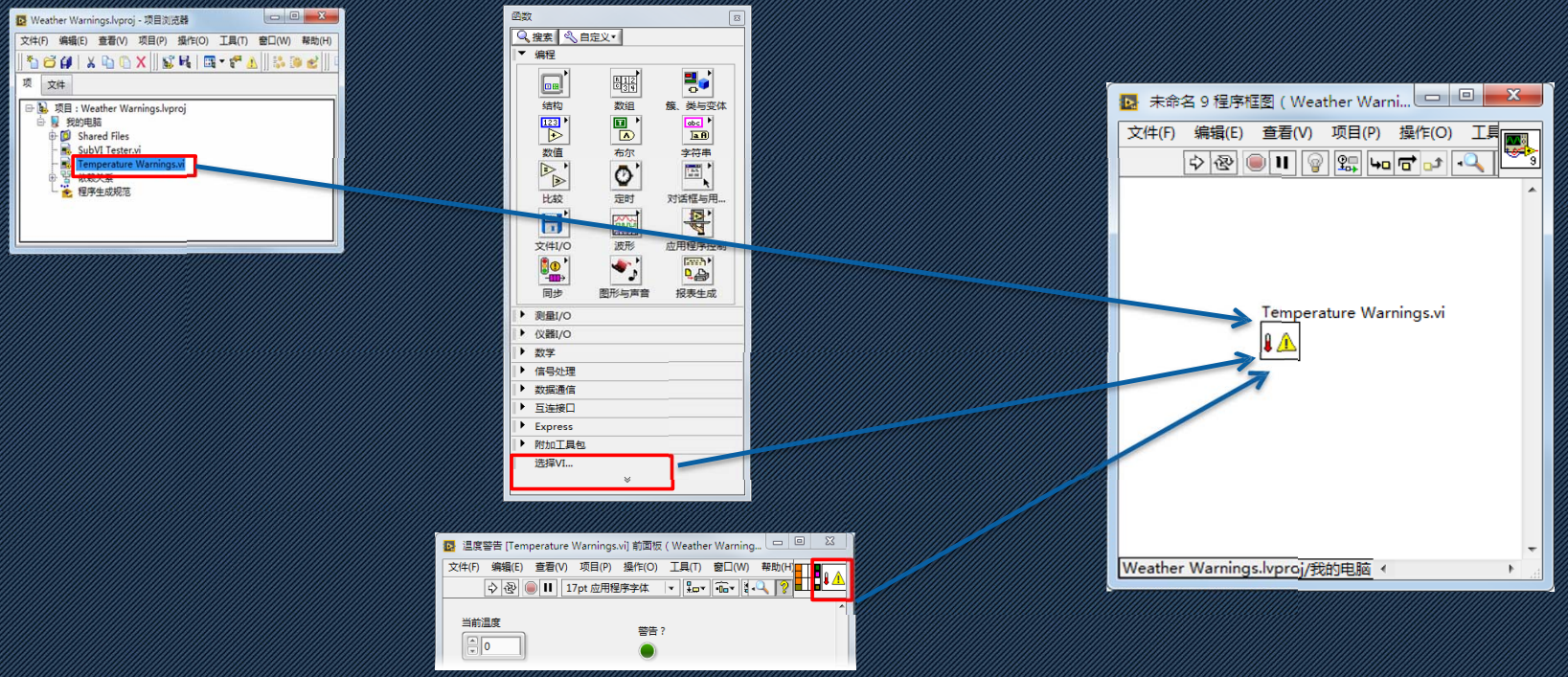
If you need to unassign a terminal, right-click the terminal and select Disconnect this Terminal

Build the Connector Pane

Set the Required, Recommended, and Optional Inputs and Outputs

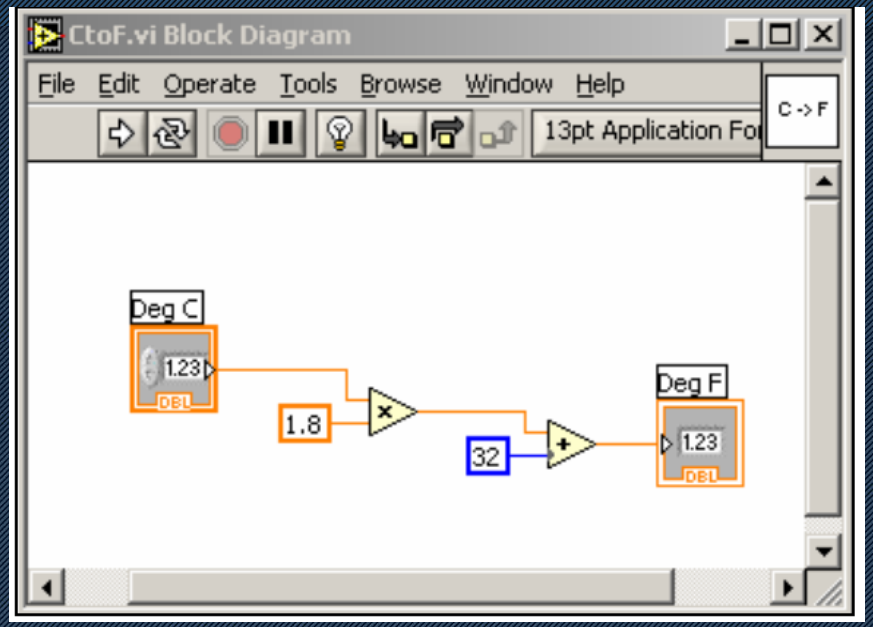


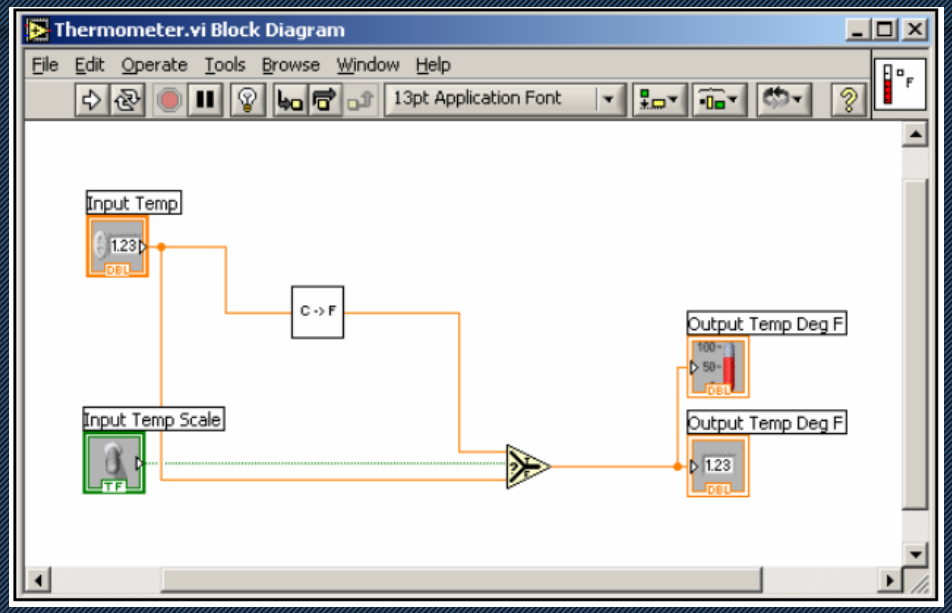
Place subVI on the Block Diagram



Studio

Create a SubVI for temperature conversion, where the input should temperature in Celsius and the output can be Fahrenheit. Use proper SubVI icon


CtoF.vi Block Diagram
File Edit Operate Tools Browse Window Help
C -> F
Deg C
1.23
DBL
1.8
32
Deg F
1.23
DBL


Thermometer.vi Block Diagram
File Edit Operate Tools Browse Window Help
13pt Application Font
Input Temp
1.23
DBL
C -> F
Output Temp Deg F
Input Temp Scale
TF
Output Temp Deg F
1.23
DBL