

ME 461 LabVIEW #1

Due September 19th 2:00 PM

Introduction

The goal of this assignment is to understand the basics of LabVIEW. Simply demonstrate your five LabVIEW programs working by the deadline. Grading for this assignment is simply full credit if you did the assignment and no credit if you did not complete the assignment. Make sure to ask questions if you get stuck.

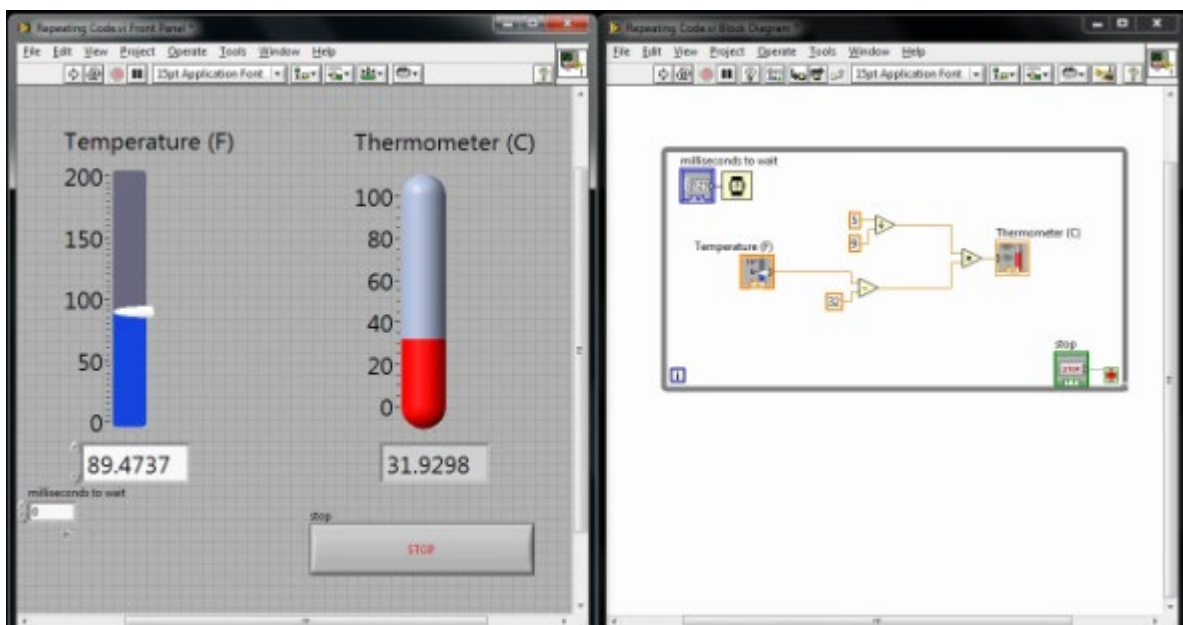
Program 1

Read through at least the first two sections at the site: <http://www.ni.com/gettingstarted/labviewbasics>

Watch at least the first two videos and the tenth video at the site:

<https://www.youtube.com/playlist?list=PLB968815D7BB78F9C>

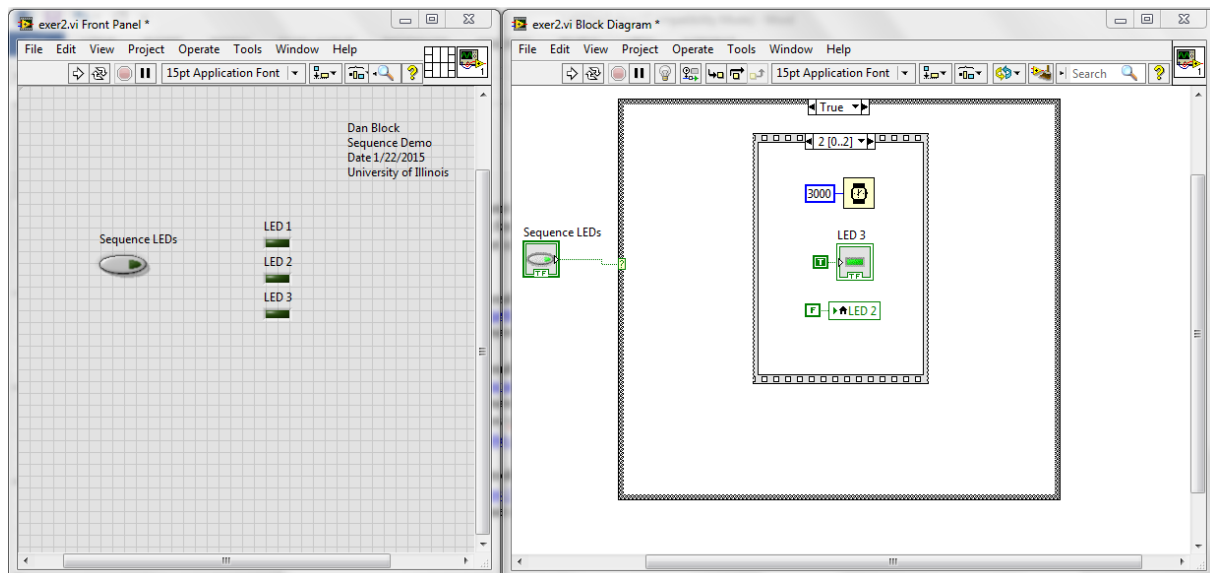
Then, reproduce (does not have to be exactly the same) the Fahrenheit to Celsius LABVIEW program that uses a loop structure to continuously run until a Stop button is pressed. Add some bells and whistles if you would like.



Program 2

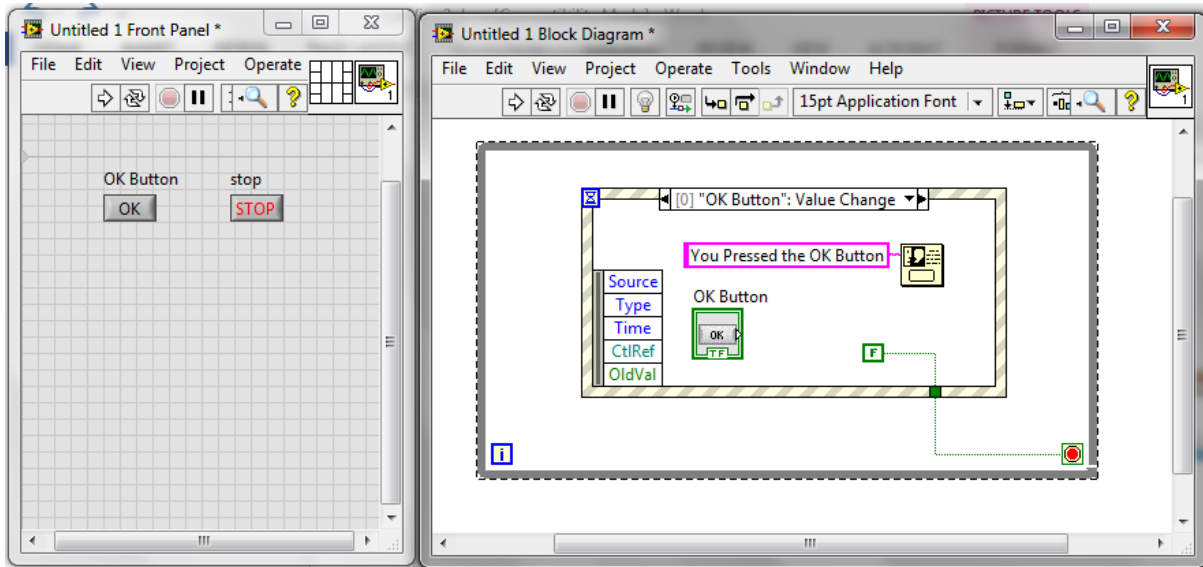
Next, do the following:

1. Read through all 12 sections at the site: <http://www.ni.com/gettingstarted/labviewbasics>
2. Watch the first 10 videos at the site:
<https://www.youtube.com/playlist?list=PLB968815D7BB78F9C>
3. You can find other good YouTube videos. Here are a few others I found to get you started
 - a. https://www.youtube.com/watch?v=Em5R_RM8E08
 - b. <https://www.youtube.com/watch?v=bflByHG5jdc>
 - c. <https://www.youtube.com/watch?v=0Ea2IQeCIMY>
 - d. <https://www.youtube.com/watch?v=QxoJlJThkKk>
4. Watch the following youtube video that introduces sequence structures:
<https://www.youtube.com/watch?v=DjN5Fpsjwng>
5. To give you an introduction to sequence structures, reproduce the VI demonstrated in the YouTube video <https://www.youtube.com/watch?v=03PykG1O1x0> . You may need to find some online help on “Case structures” as they are used in this video but not explained.



Program 3

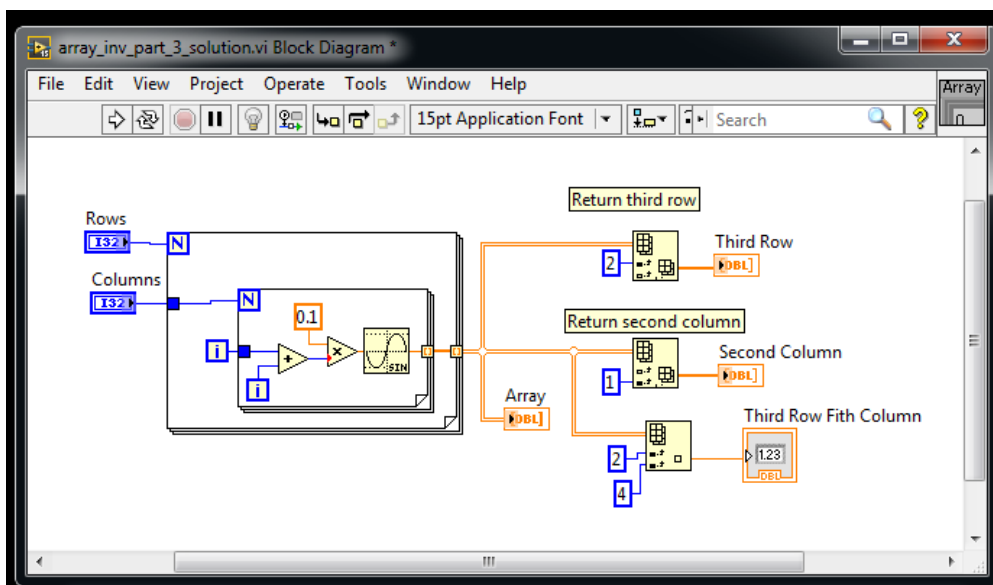
To give you an introduction to event structures, reproduce the VI demonstrated in the youtube video <https://www.youtube.com/watch?v=8eO64fo3Pho> . You do not need to demonstrate the initial “polling” VI. Just the event structure VI.

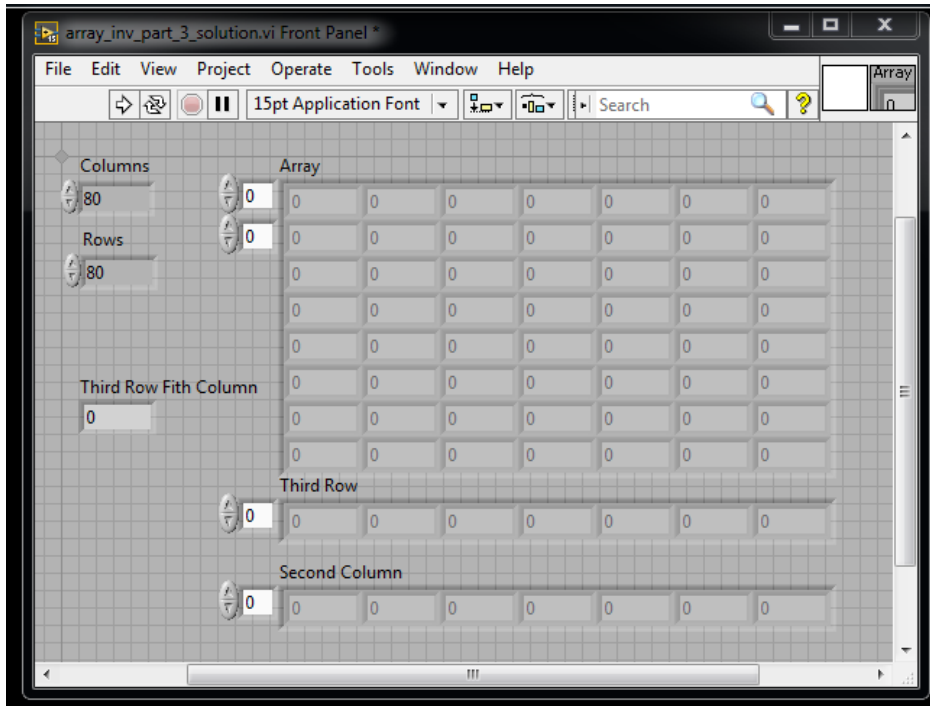


Programs 4 & 5

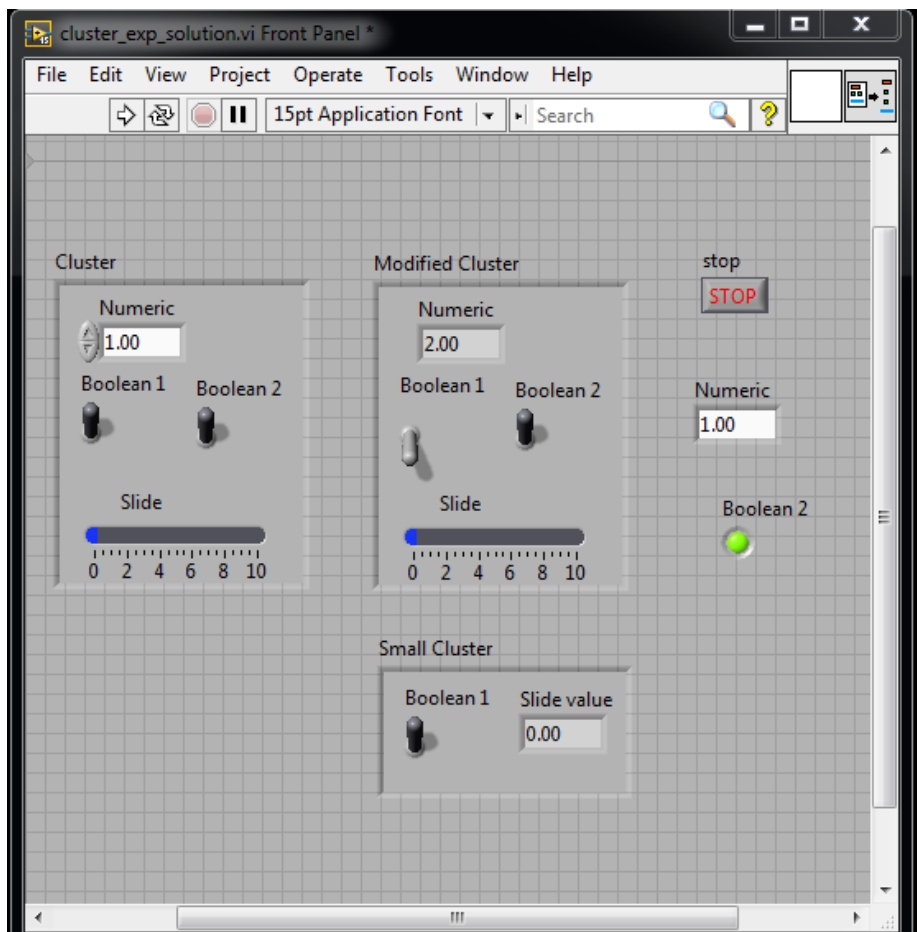
Read through the Array and Clusters Tutorial at <https://www.youtube.com/watch?v=rzOT1zXBDiE> and <https://www.youtube.com/watch?v=GIQ1riWjPc&list=PLB968815D7BB78F9C&index=8>

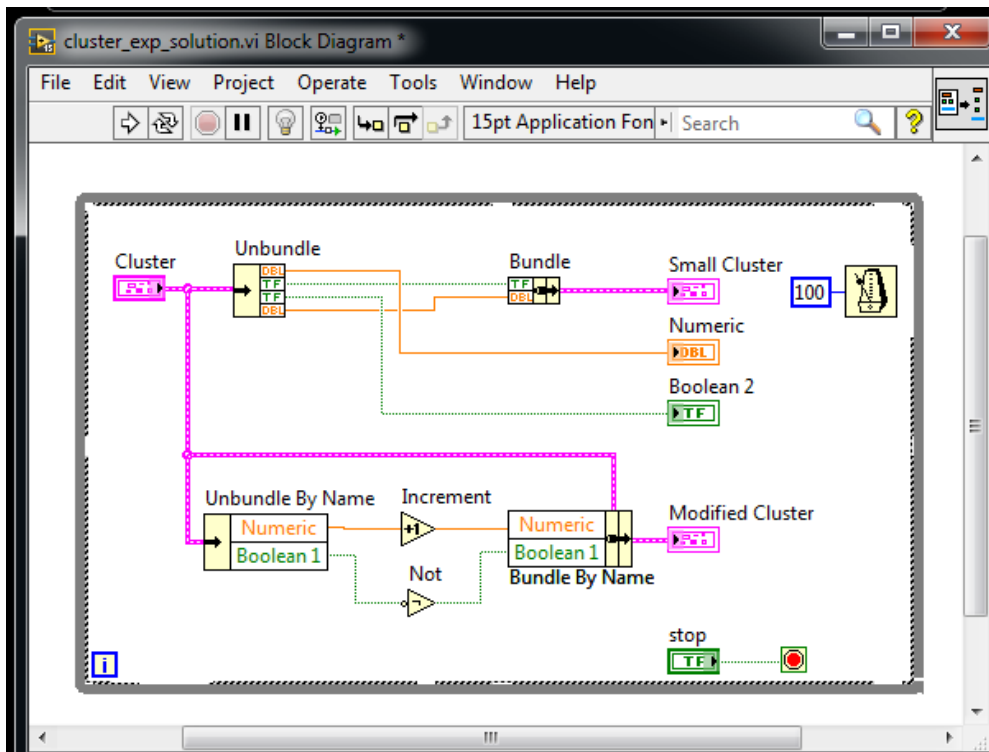
Then reproduce the following exercises. See how a “for loop” can create a multidimensional array and use the Index Array to pull out a single row and single column and a single element. Sine is found under Mathematics->Elementary->Trig





Create a Cluster and then produce two Clusters similar to the first.





LabVIEW Checklist

1. Fahrenheit to Celsius program
2. Case structure program
3. Button event program
4. Array example program
5. Cluster example program