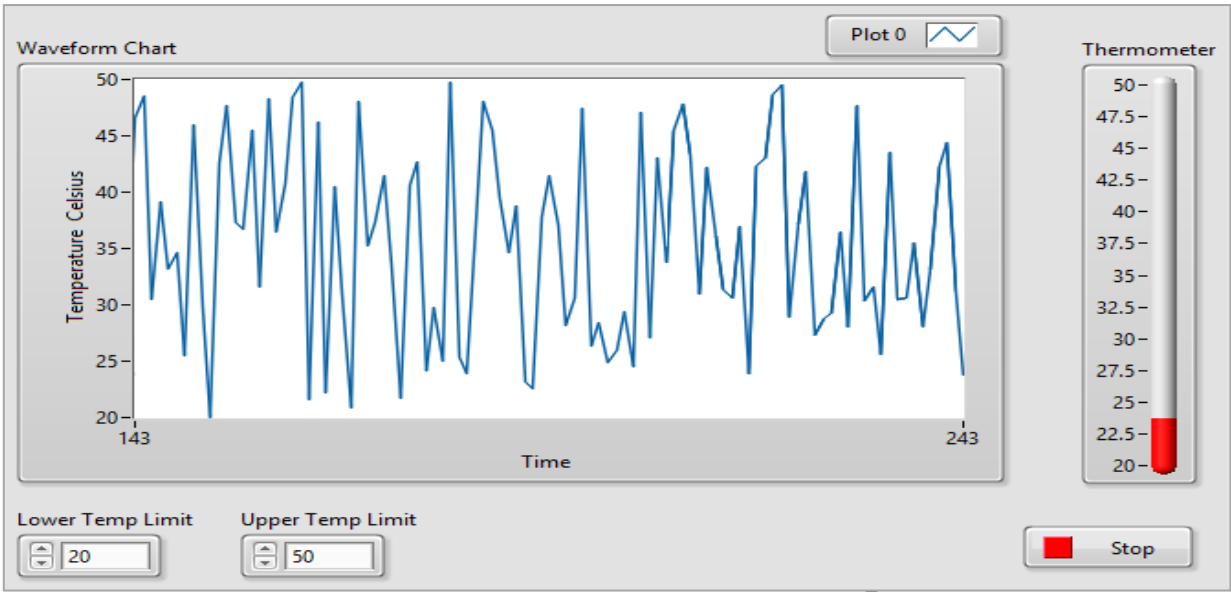




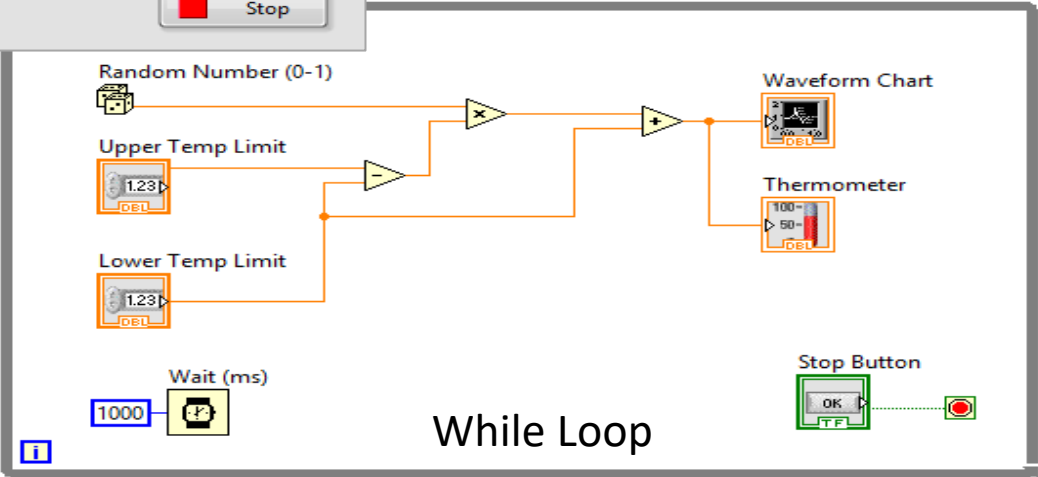
# Plotting in LabVIEW

Hans-Petter Halvorsen

# Plotting



This example simulates the Temperature in an “Air Heater” system. The Temperature in the Air Heater should be between 20 and 50 degrees Celsius. We use the Random Generator in LabVIEW in this Example



While Loop

# Waveform Chart

Controls

Modern

Numeric

Boolean

String & Path

Array, Matrix & Cluster

List, Table & Tree

Graph

Ring & Enum

Containers

I/O

Variant & Class

Decorations

Refnum

Silver

System

Classic

Express

Control & Simulation

Signal Processing

Addons

Graph

Waveform Chart

Waveform Graph

XY Graph

Ex XY Graph

Intensity Chart

Intensity Graph

Digital Waveform ...

Mixed Signal Graph

Compass Plot

Error Bar Plot

Feather Plot

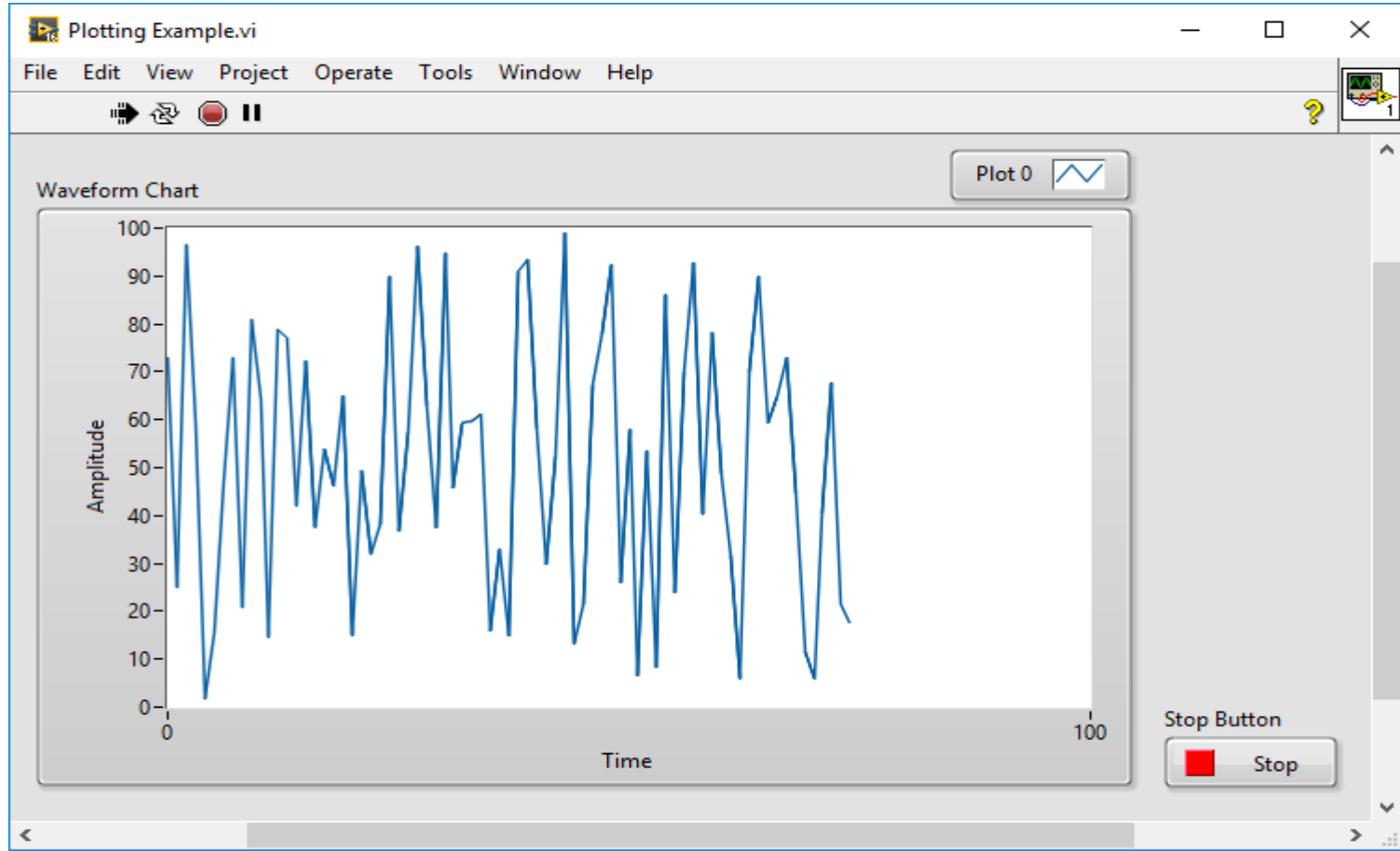
XY Plot Matrix

Controls

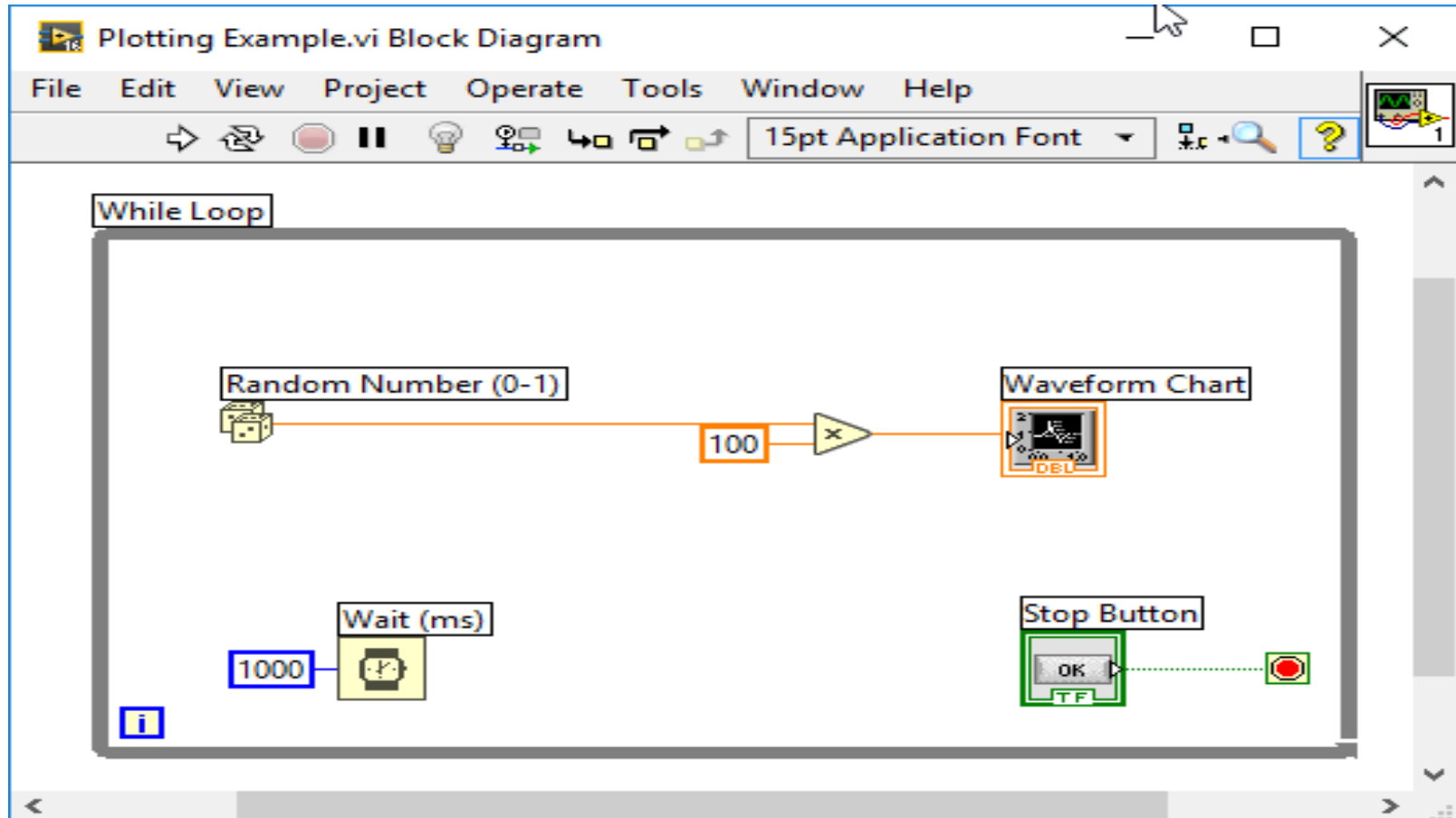
3D Picture

3D Graph

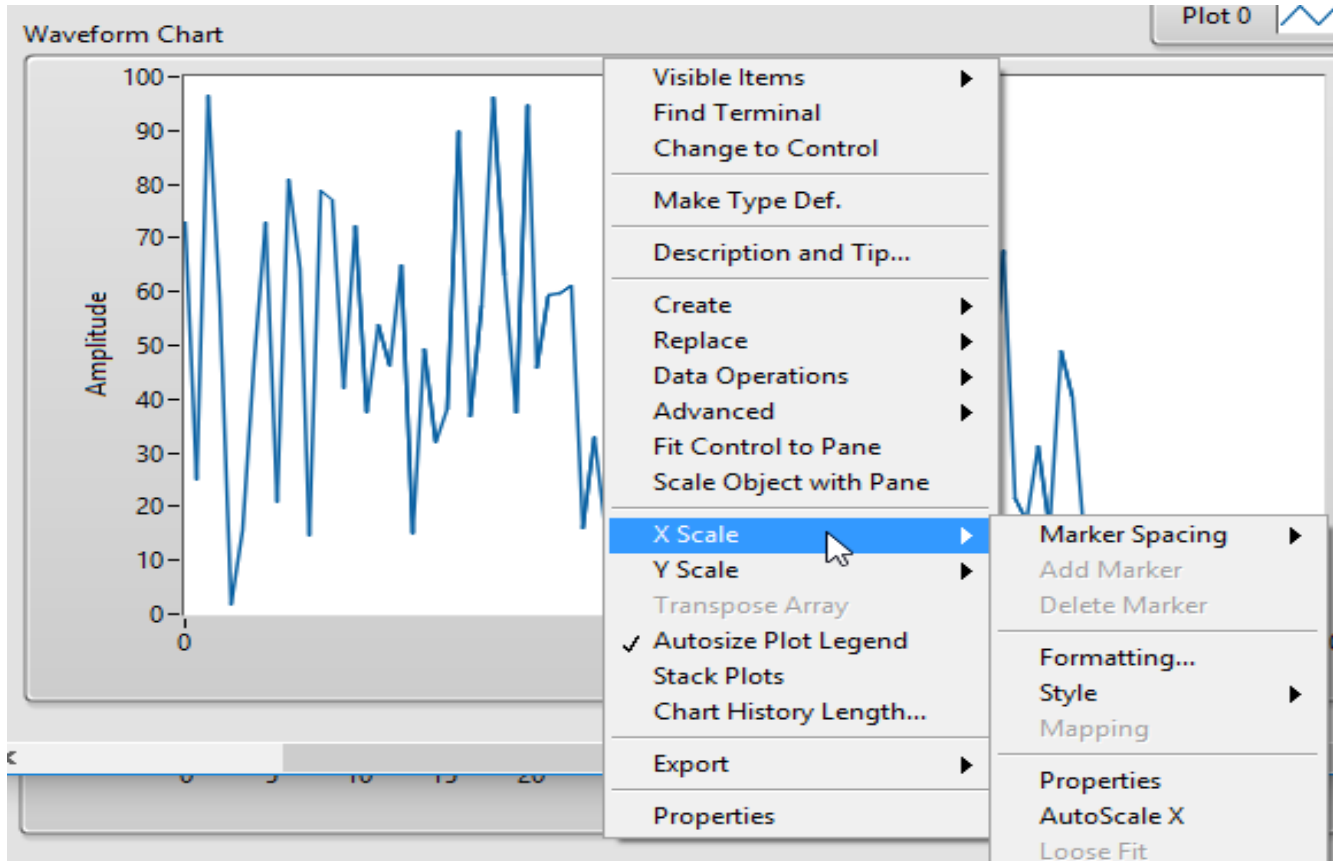
# Waveform Chart



# Waveform Chart



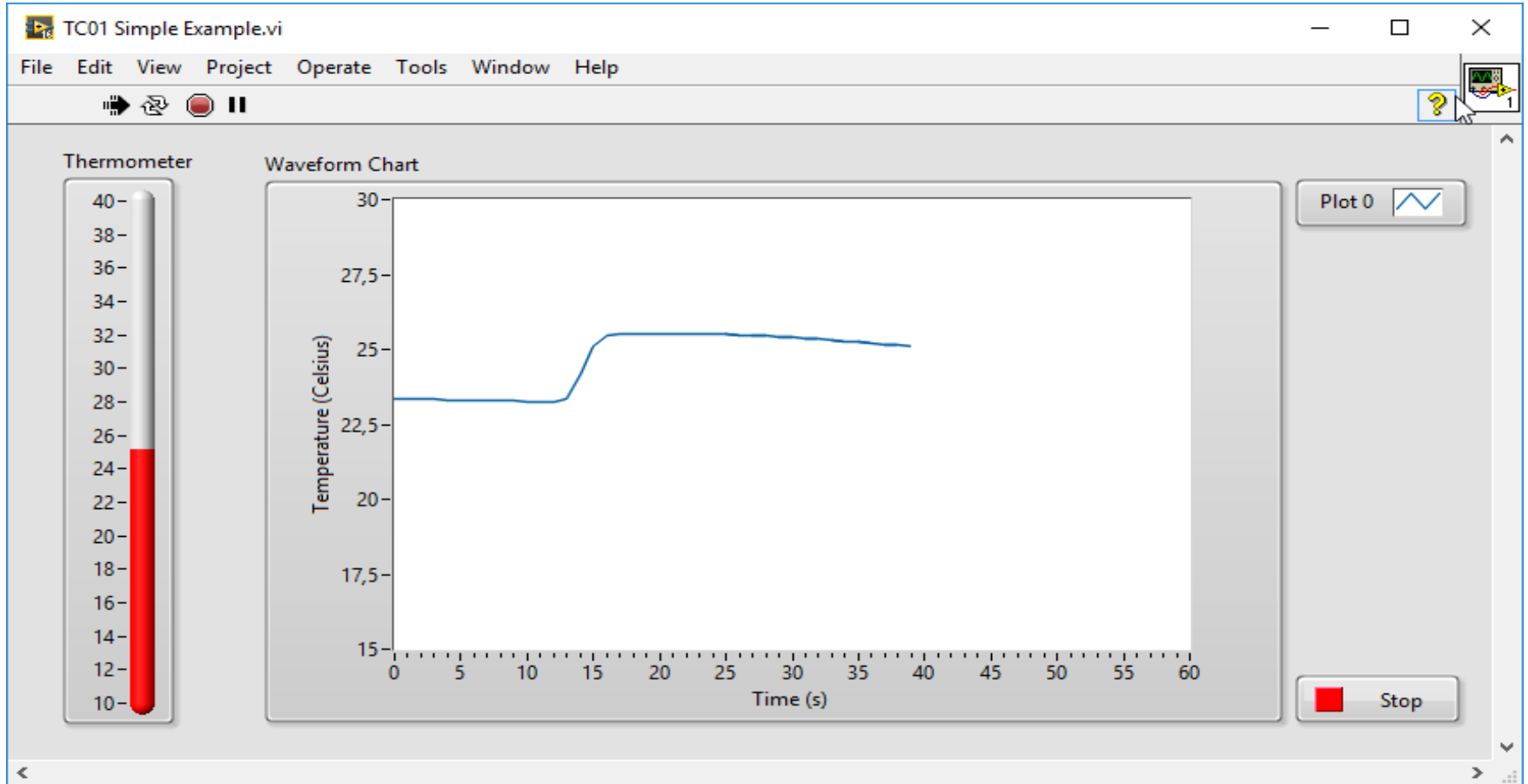
# Chart Properties and Setting



Set Color, Thickness,  
Grid, AutoScale, ...

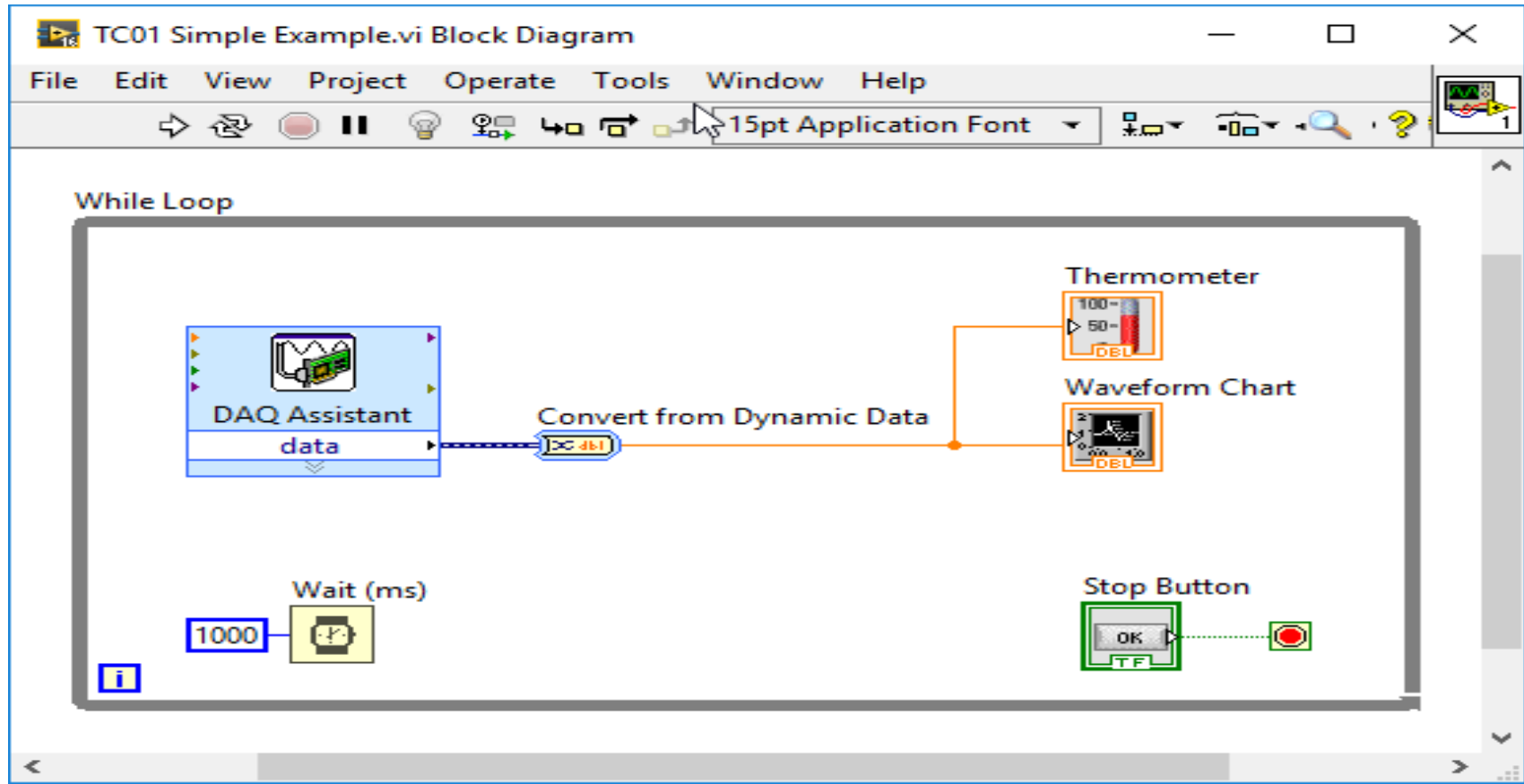
**DEMO**

# Plotting Data from a DAQ Device

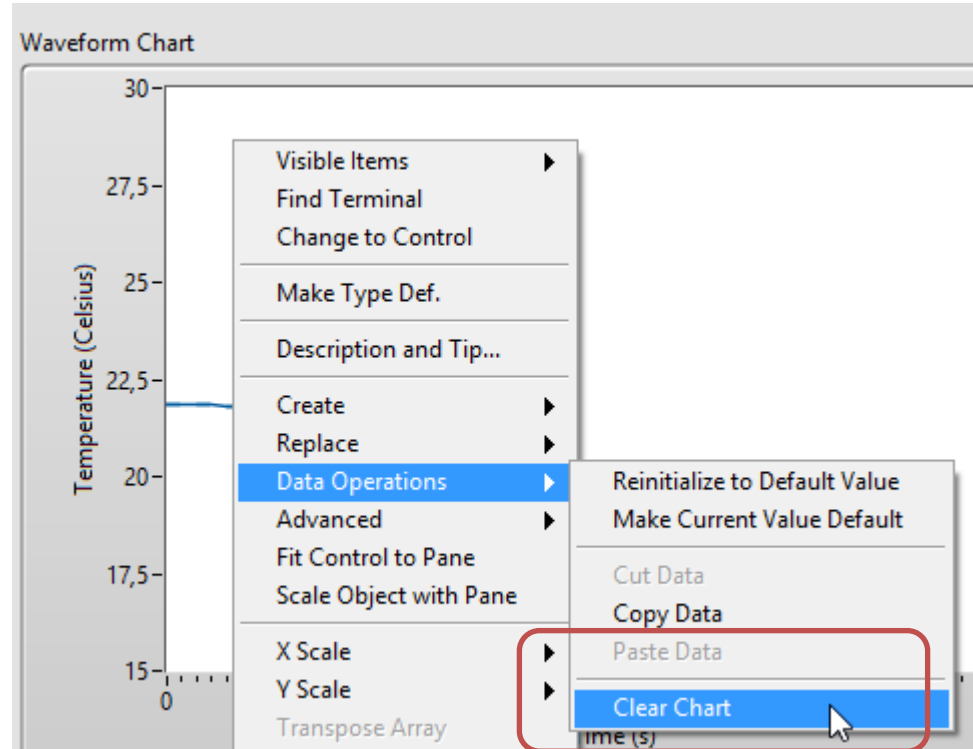
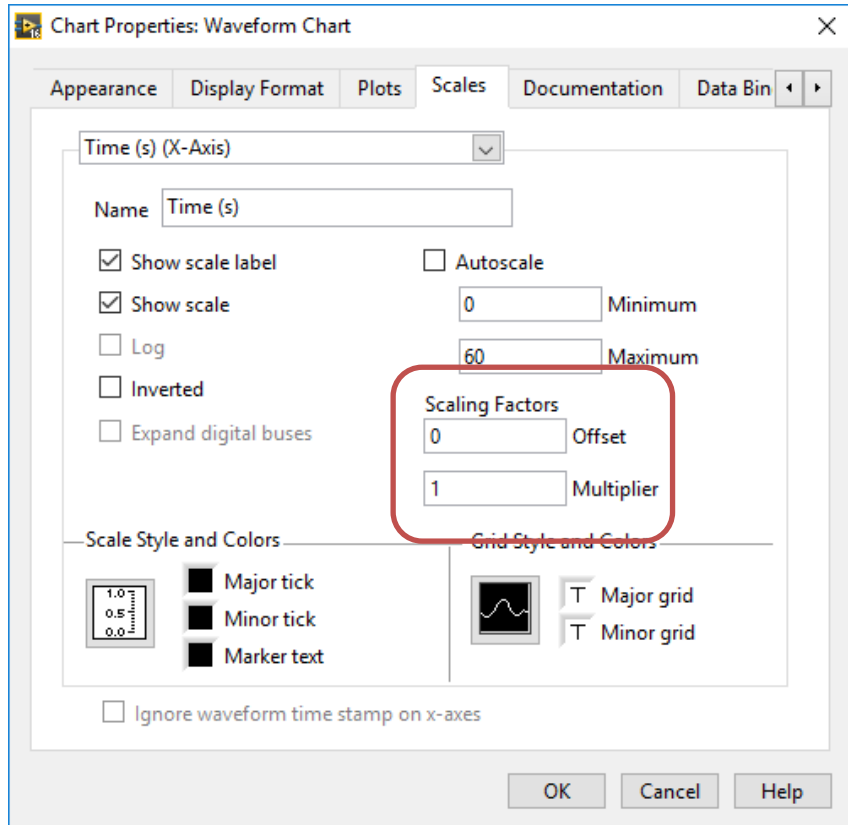




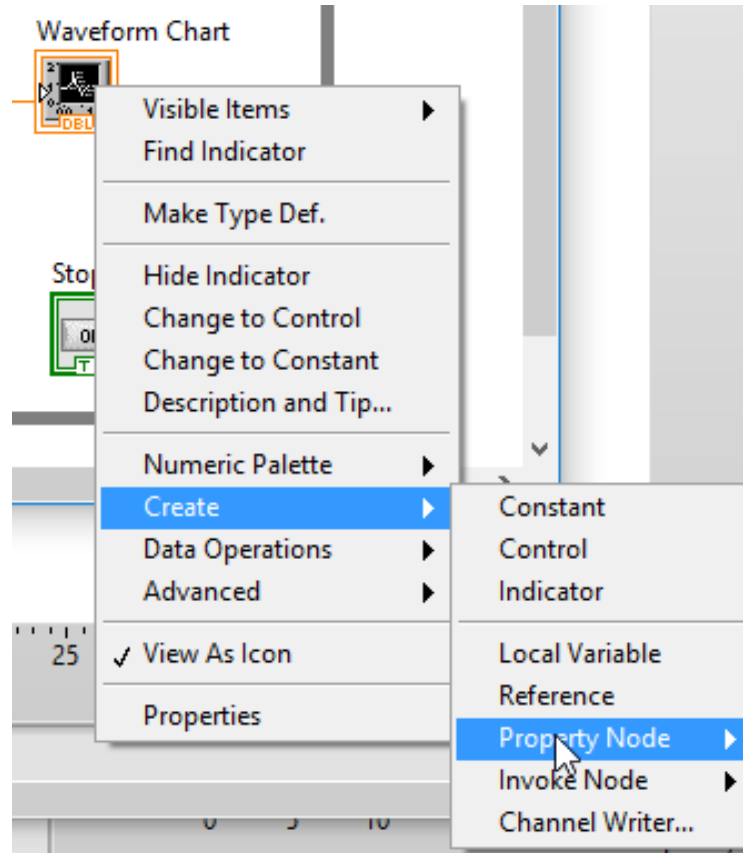
# Plotting Data from a DAQ Device



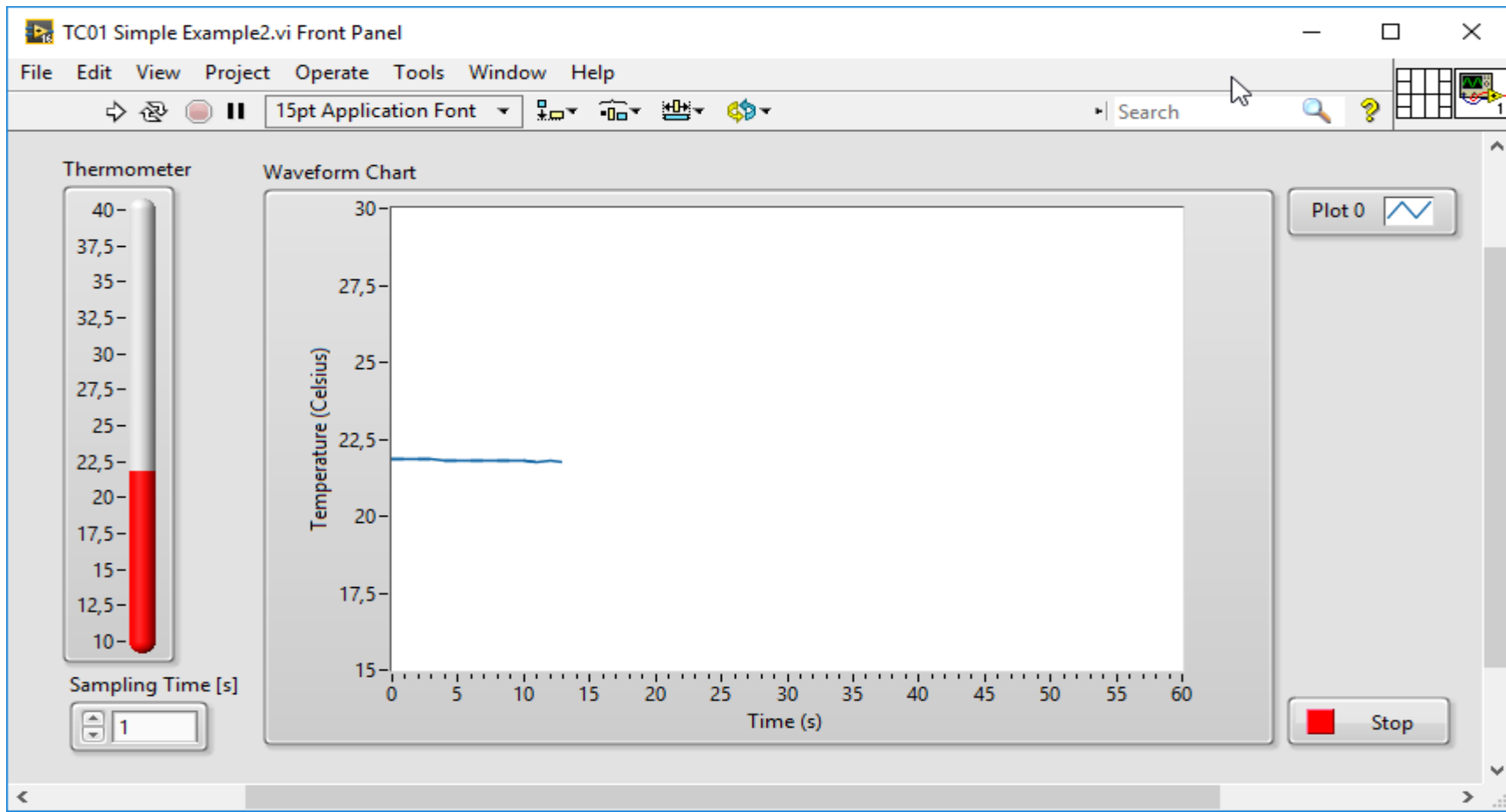
# Plotting Data from a DAQ Device



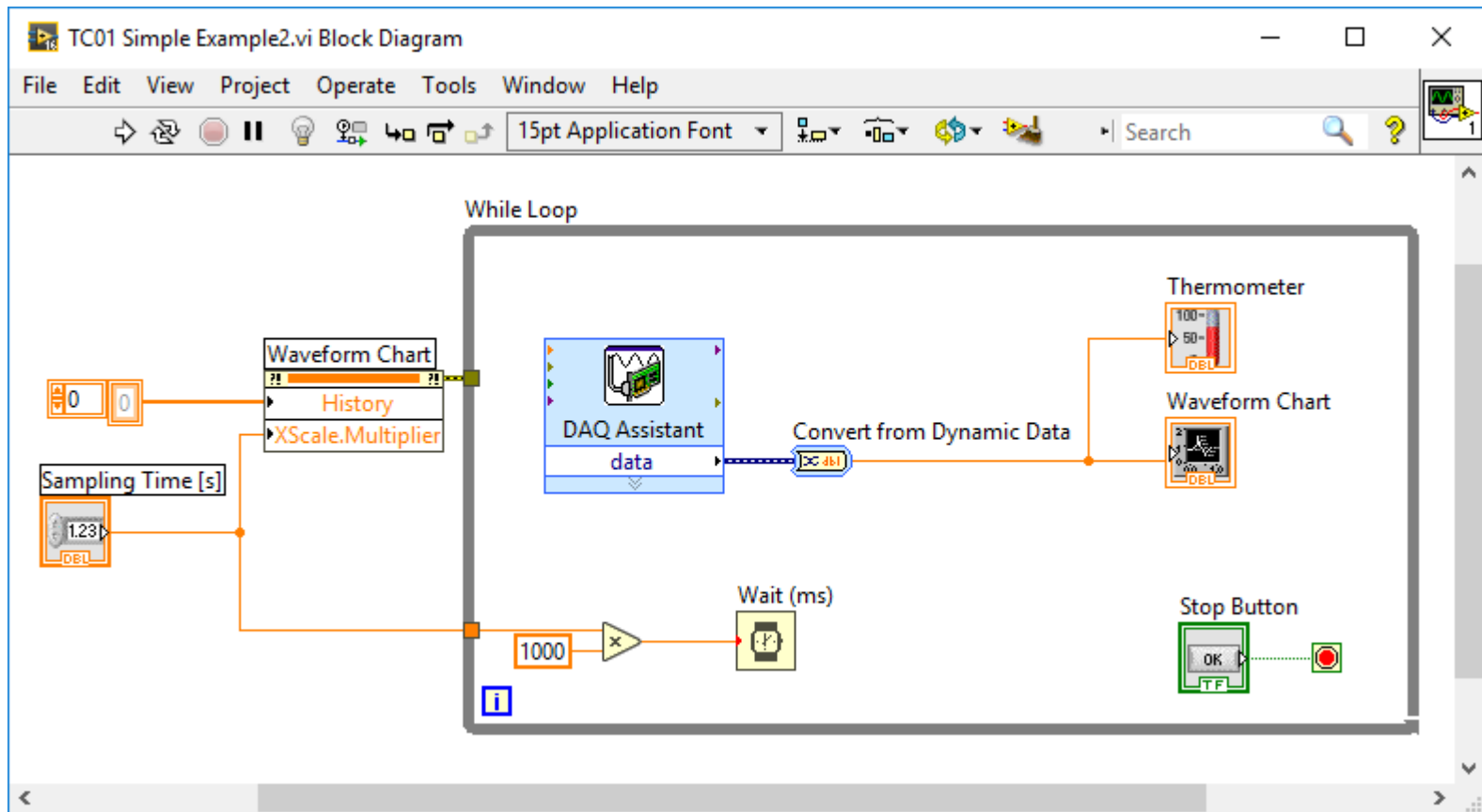
# Using Property Nodes



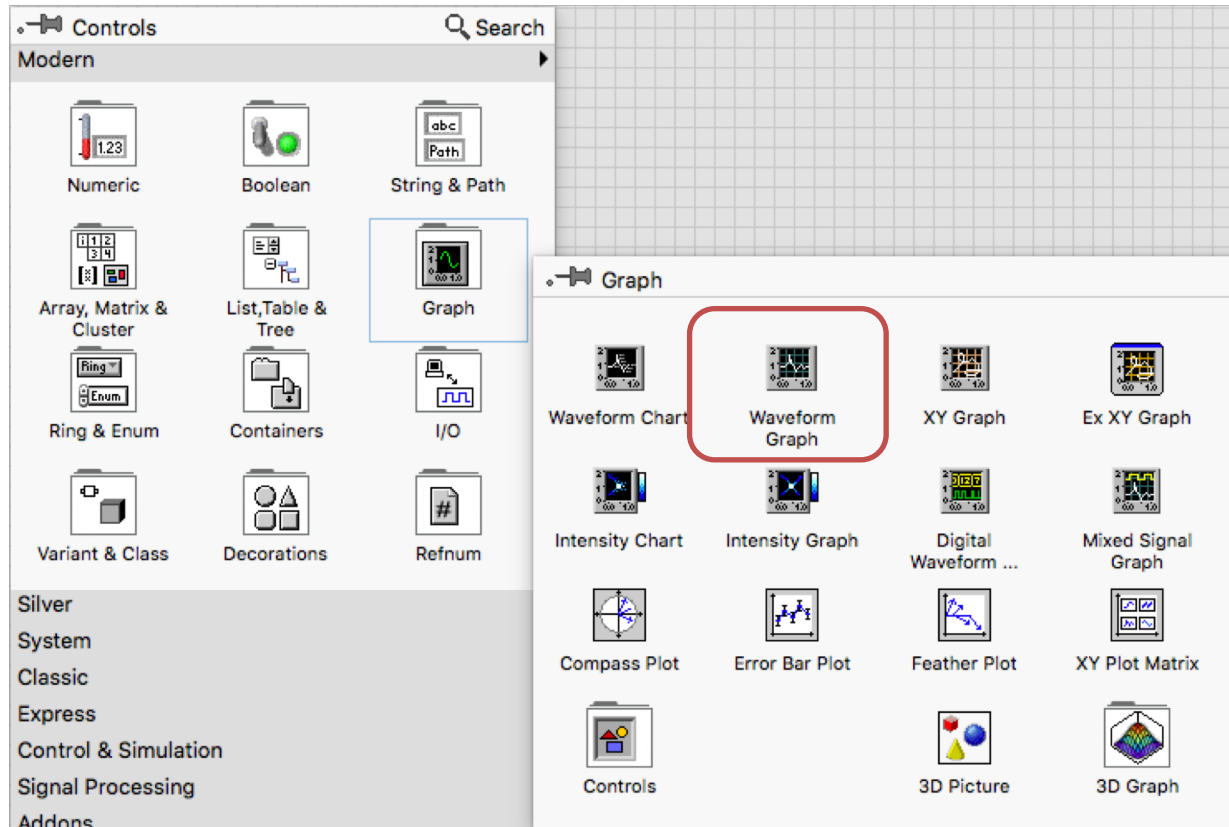
# Using Property Nodes



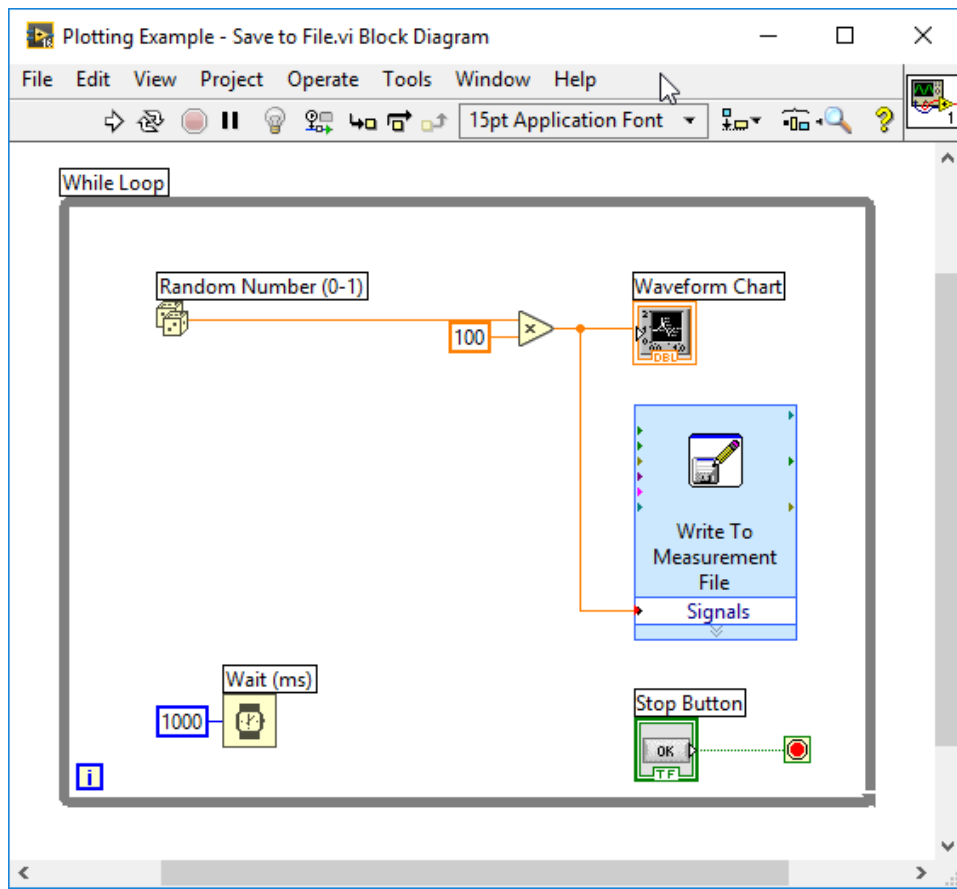
# Using Property Nodes



# Waveform Graph



# Logging to File

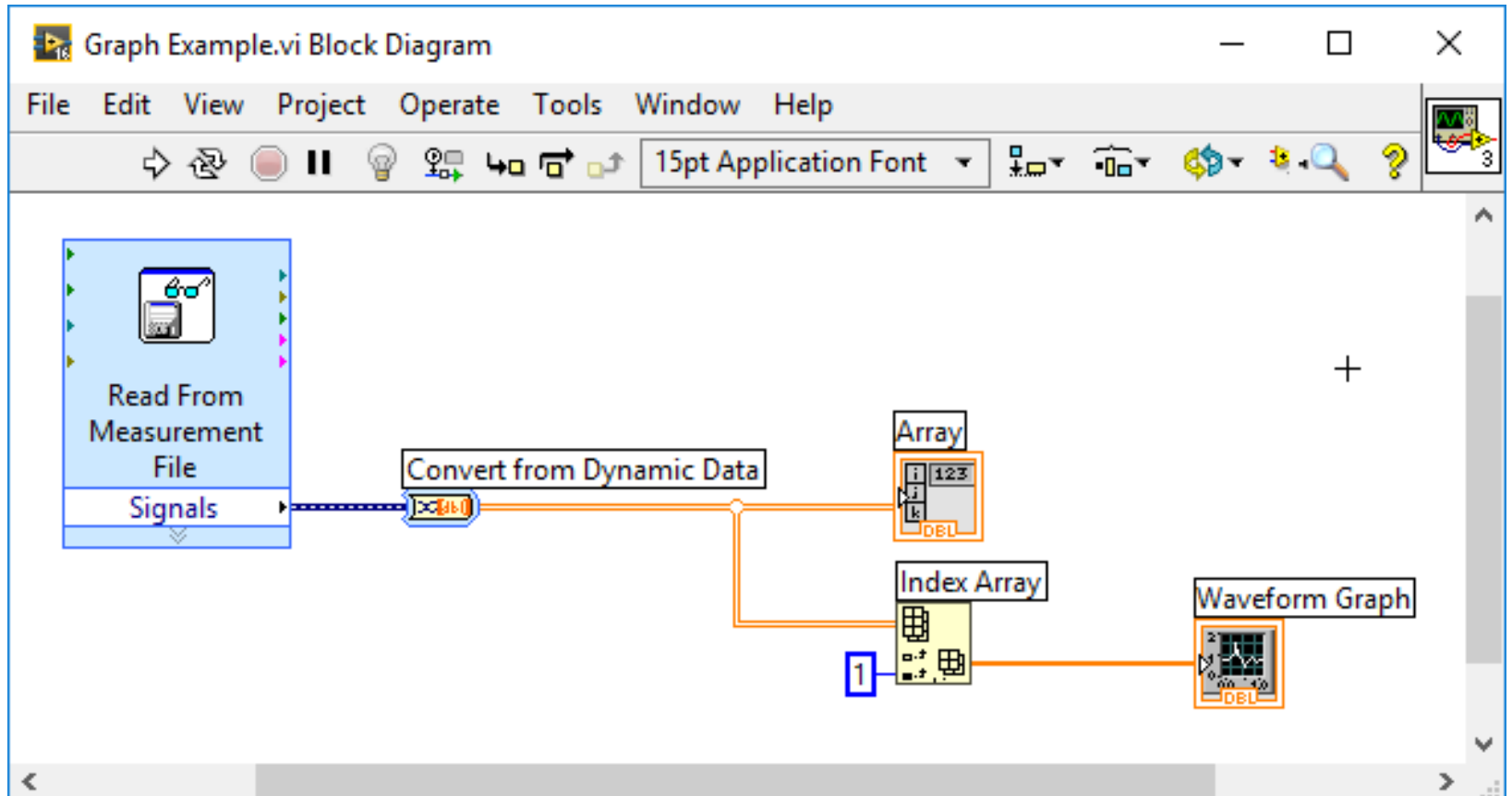


Data.lvm - Notep...

File Edit Format View Help

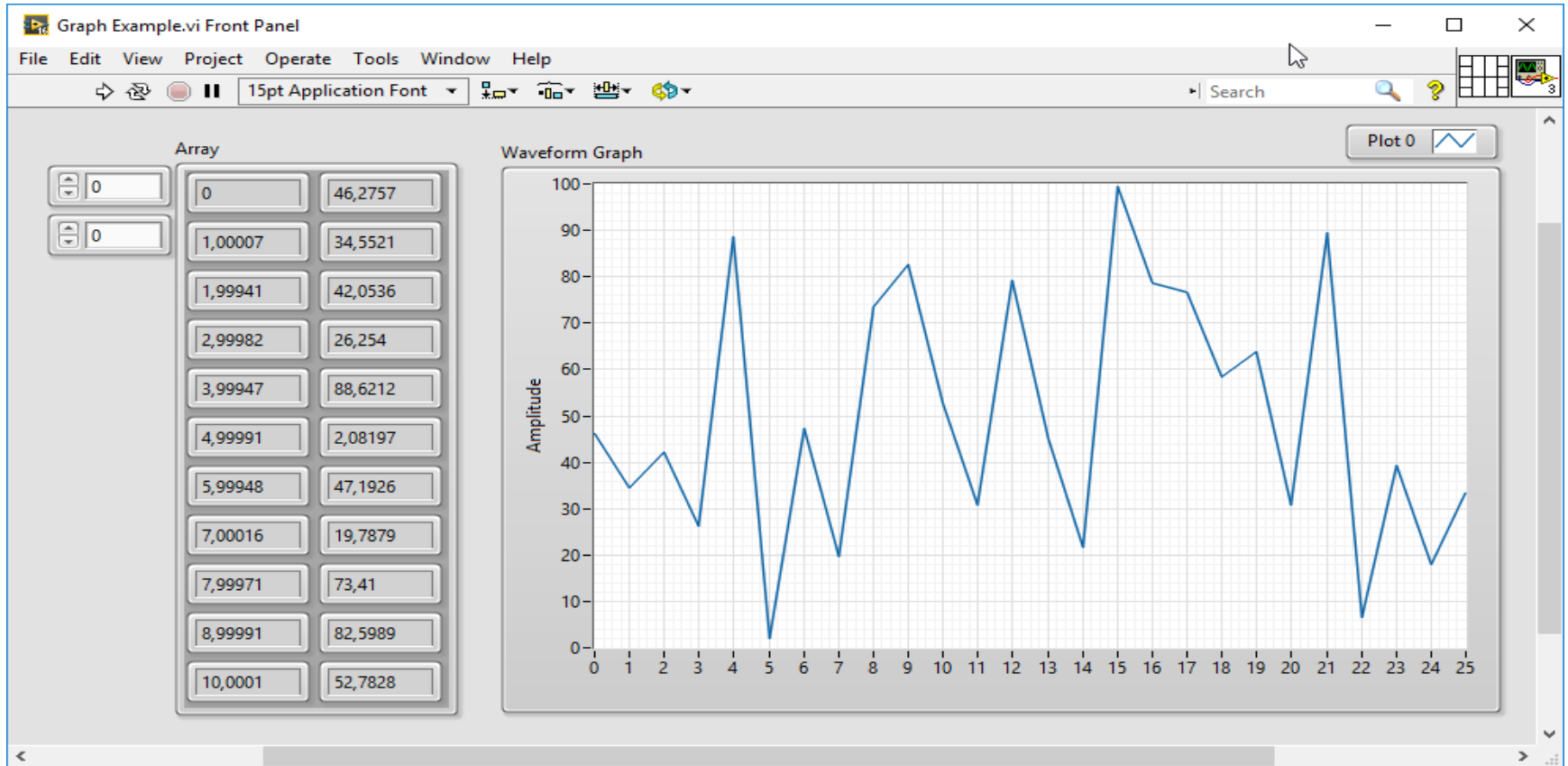
1,001367	11,119971
2,000580	95,768188
3,000971	16,775254
4,000944	27,734675
5,002231	38,398160
6,002350	96,129337
7,001824	35,765034
8,002419	27,662505
9,001737	40,506362
10,001794	68,768457
11,002028	10,337814
12,002317	26,096097
13,002203	70,564030
14,001988	82,178293
15,003300	70,943584
16,002667	21,863046
17,002835	55,678993
18,003065	48,451415
19,003519	88,583919
20,002772	81,158003

# Waveform Graph





# Waveform Graph



**DEMO**

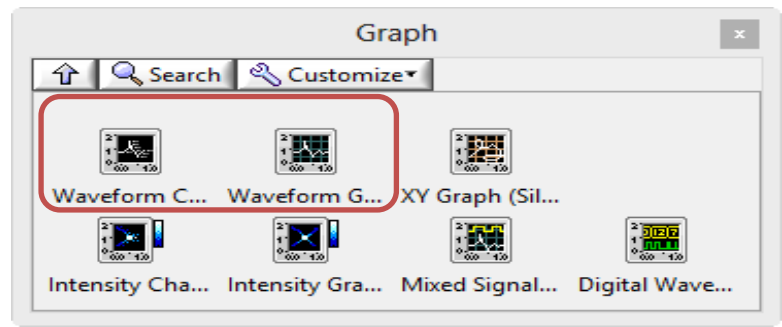
# Charts vs. Graphs

## Chart:

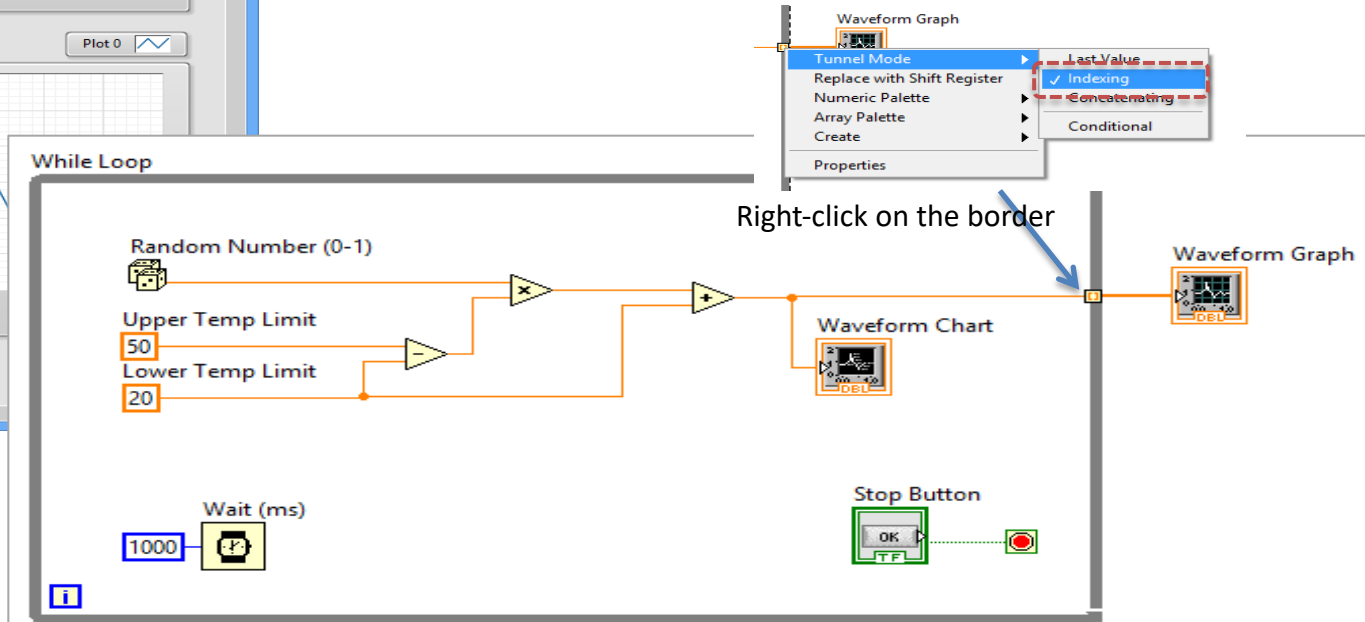
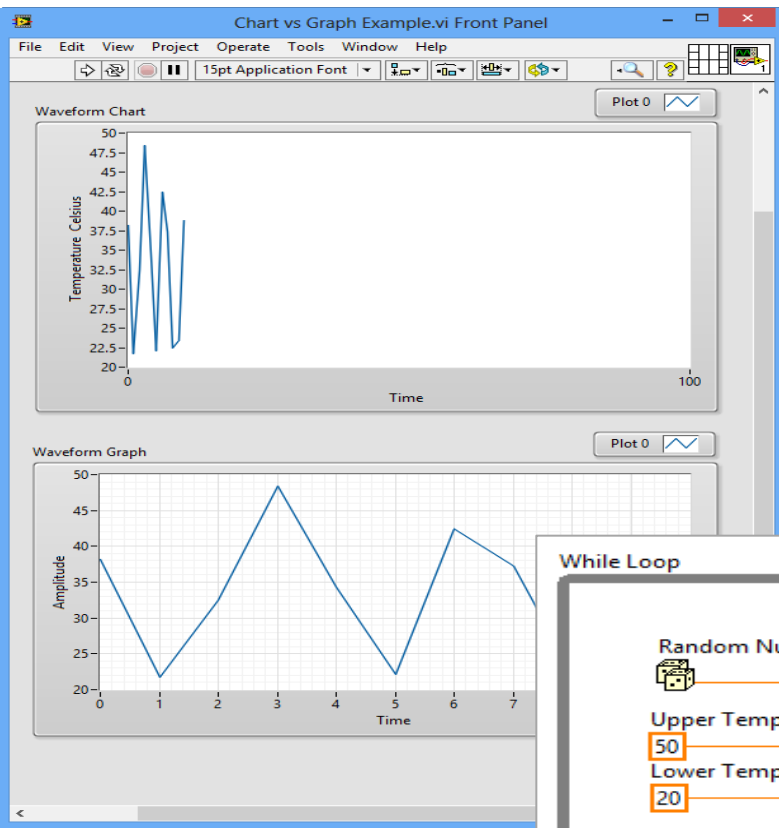
- Remembers history – New point added to end of the plot
- Used inside a While Loop/For Loop
- One new point is added each time

## Graph:

- You plot all the data at once – typically an array with data
- Used outside a While Loop/For Loop



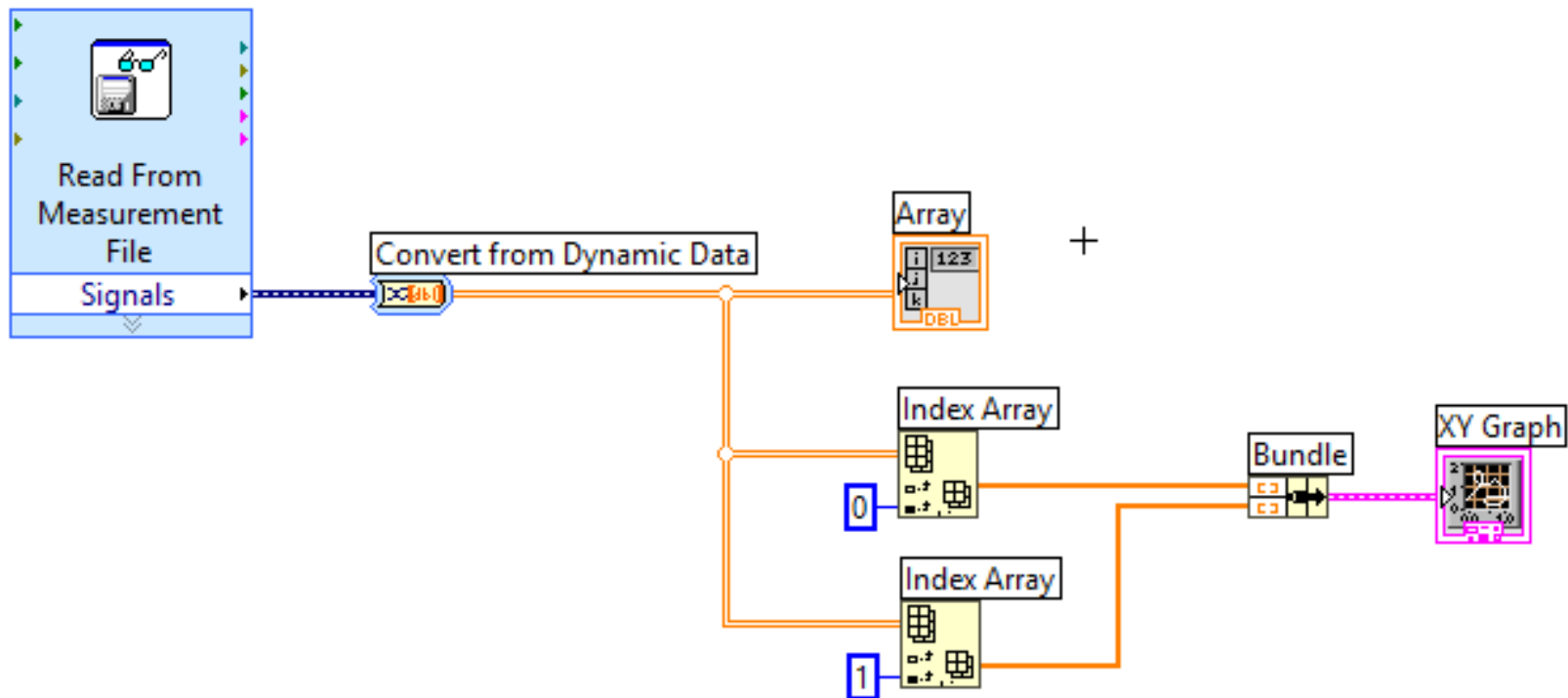
# Charts vs. Graphs - Example



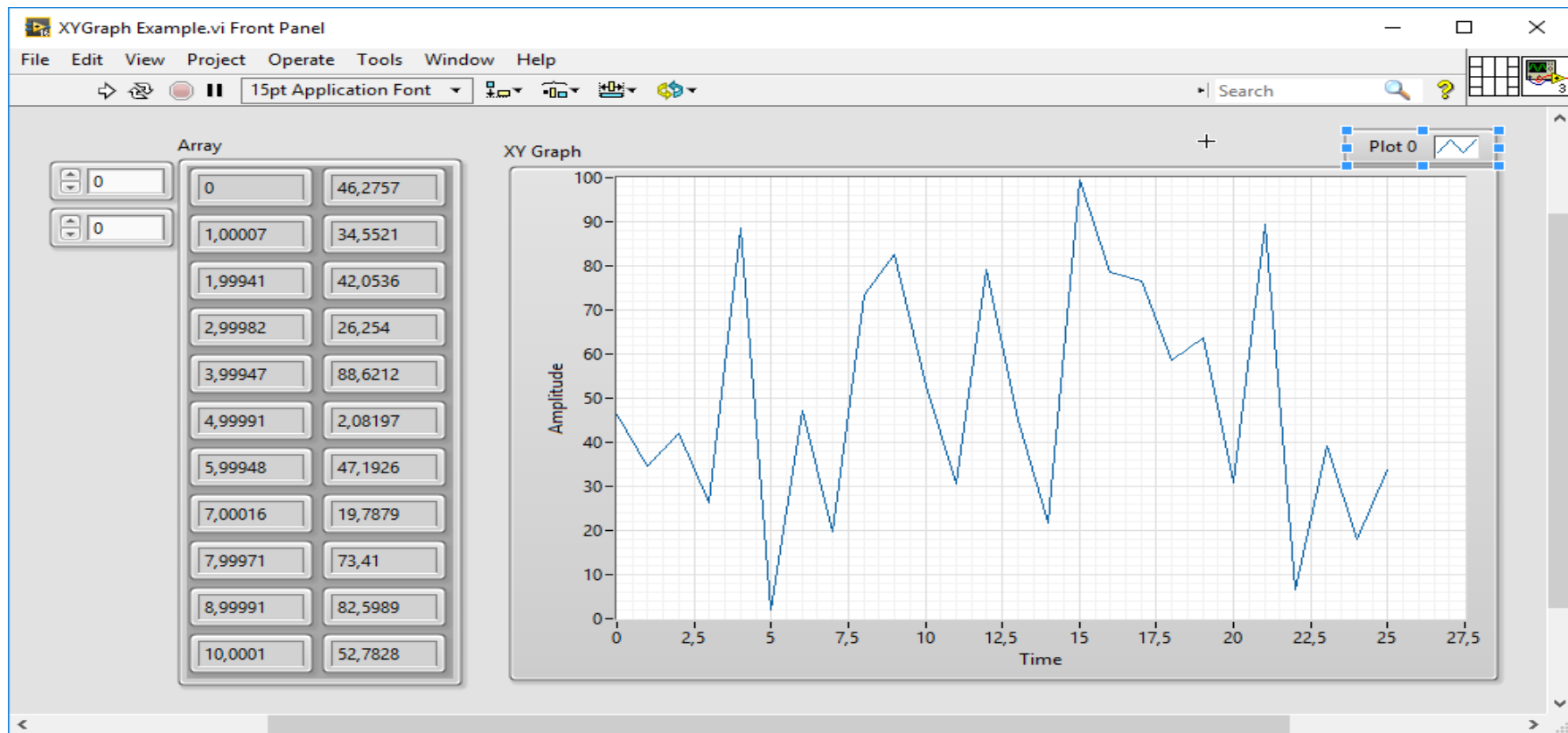
**Note!** To do something with an object – just Right-click on it!

**DEMO**

# XY Graph



# XY Graph

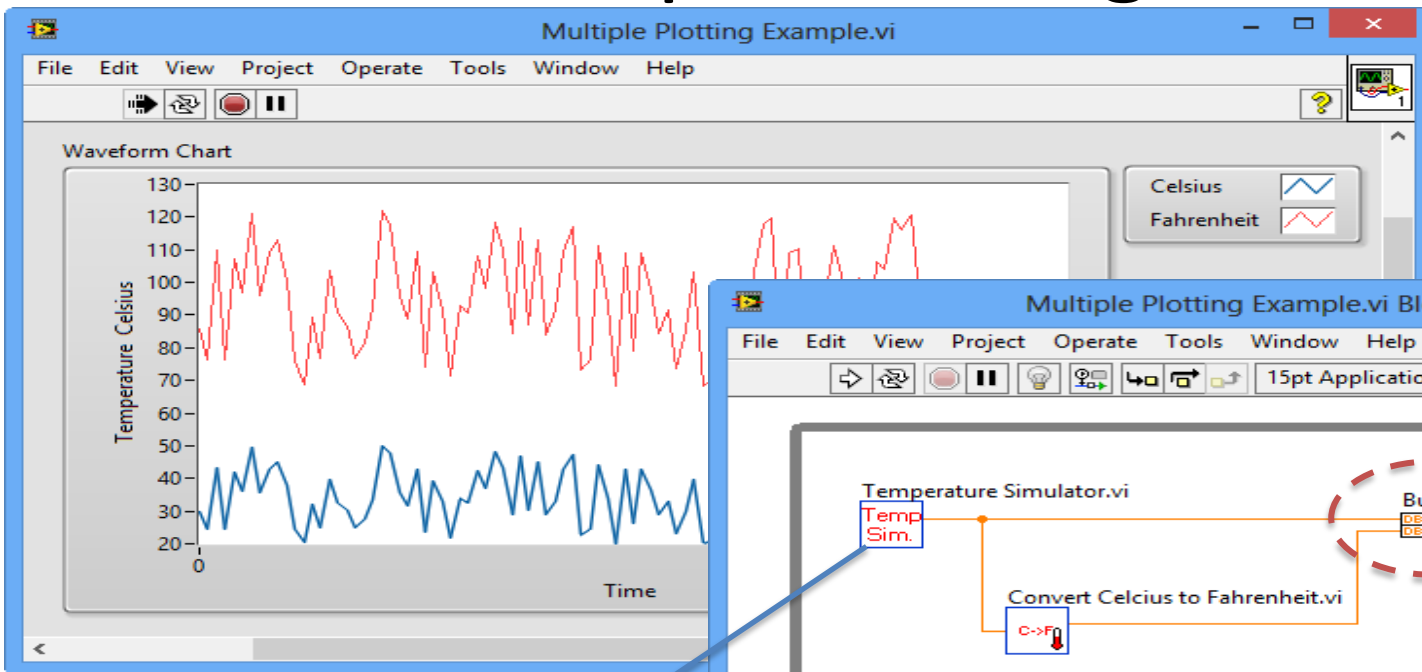


**DEMO**

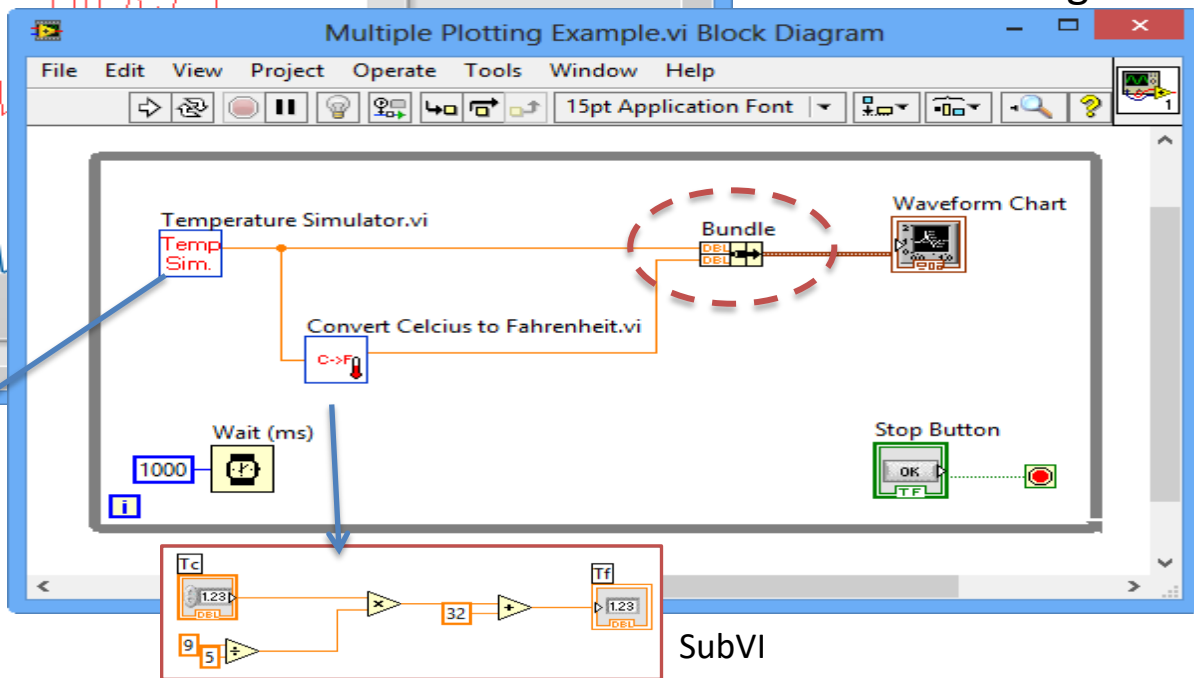


# Multiple Plotting and SubVIs

Front Panel



Block Diagram



Do you see how simple and intuitive the code becomes when using SubVIs?

**DEMO**

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Web: <https://www.halvorsen.blog>

