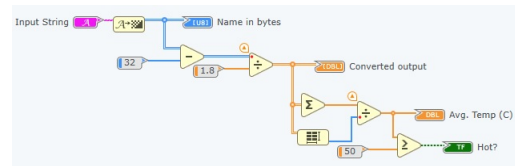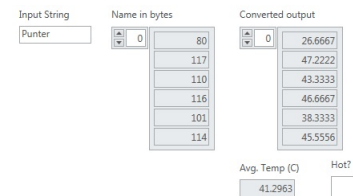# Lab 1 - Introduction to LabView
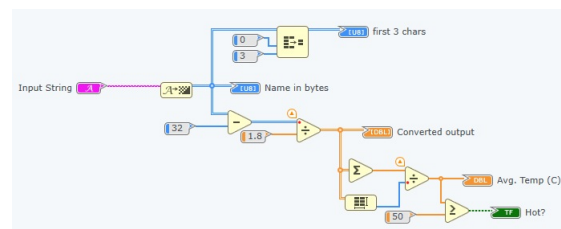
Exercise 1 - Data Types in LabView

Block Diagram - Convert name into byte value, then convert from Fahrenheit to Celsius
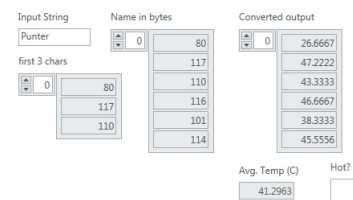

Panel - Running conversion of name from Fahrenheit to Celsius

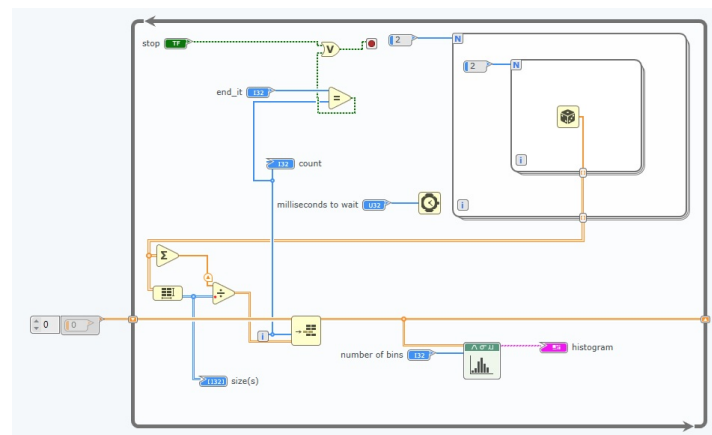**Block Diagram - Get integer value of first three characters**

Panel - Running integer value of first three characters

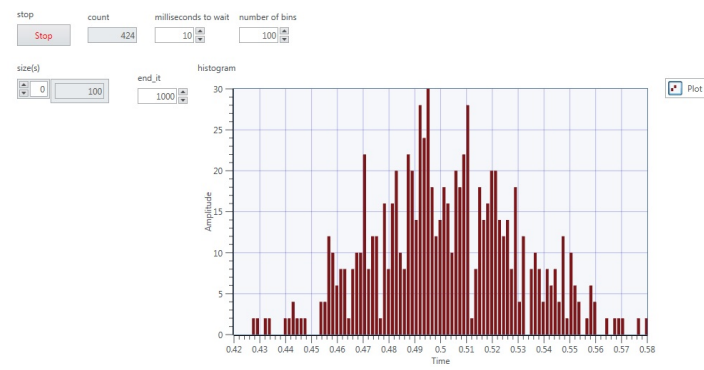## Exercise 2 - Implementation of the Central Limit Theorem

- First, we created a uniform distribution generator.
- By repeatedly generating uniformly distributed random numbers, we observed the sample mean converging to a normal distribution.
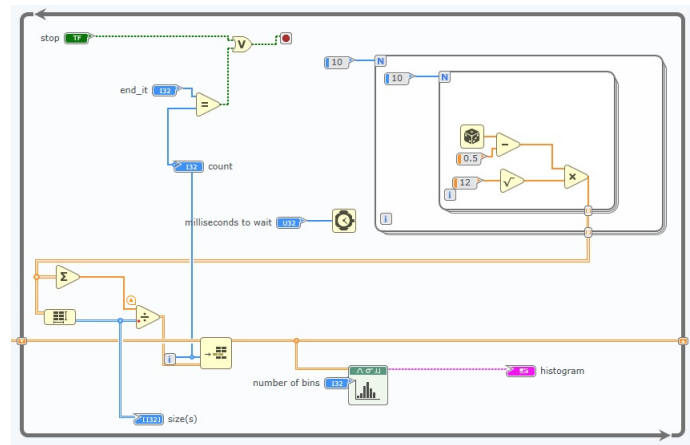
Diagram 1

Output:

Histogram 1

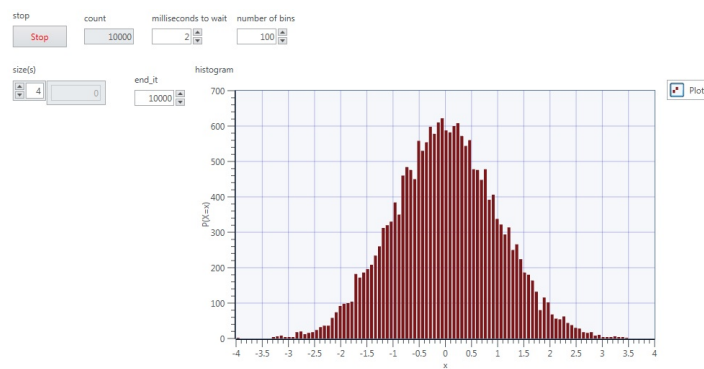## Task: to standardize the normal distribution produced by the Central Limit Theorem

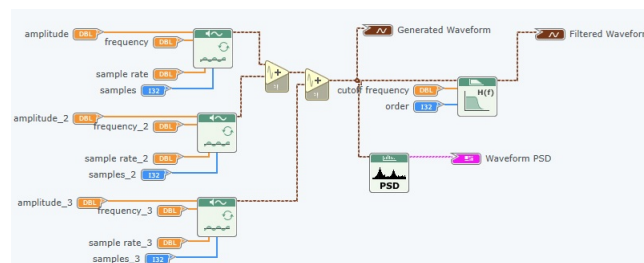- Subtracted the mean from the random variable, and then dividing by the standard deviation

Diagram 2
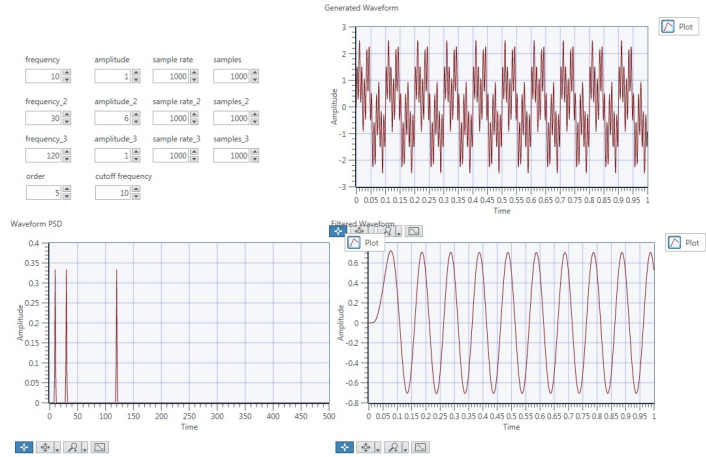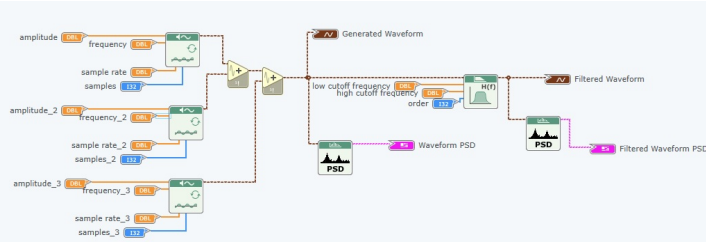

New output was as follows:

Histogram 2

Exercise 3

Block Diagram - Just lowpass filter

Front Panel - Just lowpass filter output

Generated Waveform

frequency	amplitude	sample rate	samples
10	1	1000	1000

frequency_2	amplitude_2	sample rate_2	samples_2
30	6	1000	1000

frequency_3	amplitude_3	sample rate_3	samples_3
120	1	1000	1000

order	cutoff frequency
5	10

Waveform PSD

Filtered Waveform

Block Diagram - Bandpass filter

amplitude
frequency
sample rate
samples
Generated Waveform
low cutoff frequency
high cutoff frequency
order
H(f)
Filtered Waveform
amplitude_2
frequency_2
sample rate_2
samples_2
Waveform PSD
PSD
amplitude_3
frequency_3
sample rate_3
samples_3
PSD
Filtered Waveform PSD

Front Panel - Bandpass filter output

frequency	amplitude	sample rate	samples
10	1	1000	1000

frequency_2	amplitude_2	sample rate_2	samples_2
30	1	1000	1000

frequency_3	amplitude_3	sample rate_3	samples_3
120	1	1000	1000

order	low cutoff frequency	high cutoff frequency
5	20	40

Waveform PSD

Generated Waveform

Filtered Waveform PSD

Filtered Waveform