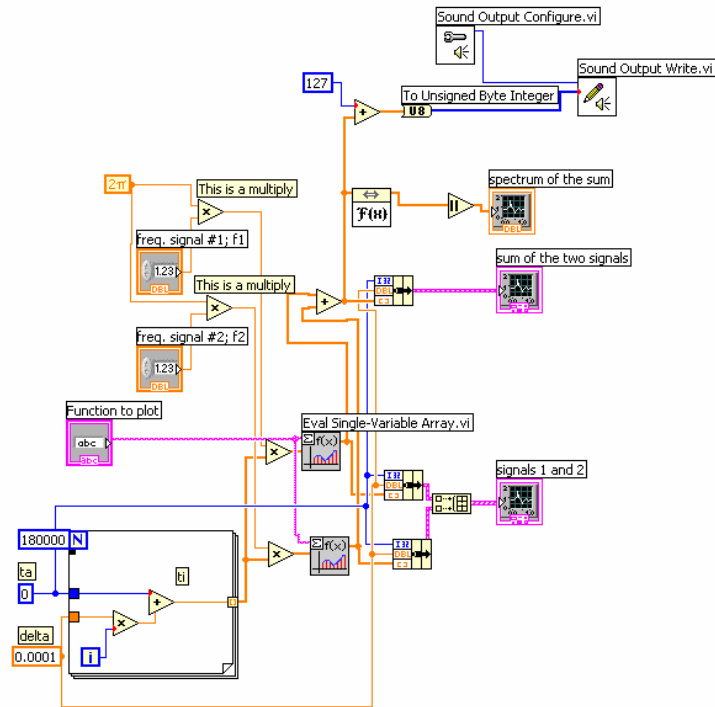
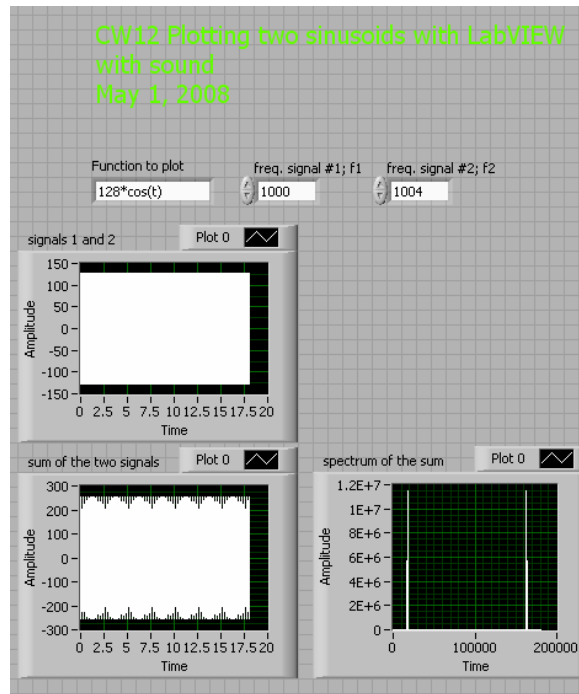


Engin 103
May 1, 2008

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Topics:
[Sound with LabVIEW](#)
[Project 3 Topic Assignment](#)
[Logbook questions](#)

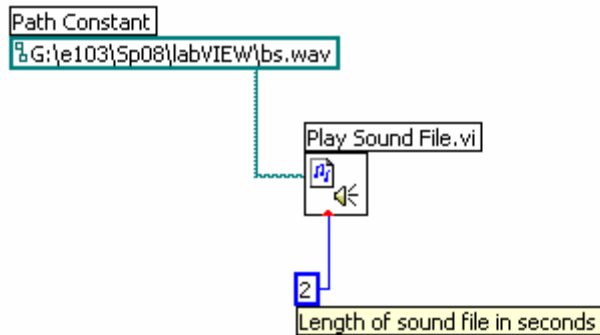
Sound



Modifications:

- Use amplitude of 128 for the $\cos(t)$ signal
- Use frequencies instead of periods at the Numeric Controls
- Replace $2\pi/T$ by $2\pi f$ in the Block Diagram (for both f_1 and f_2)
- Add 127 to the sum of the two signals
- Use "To Unsigned Byte Integer" to convert to an 8-bit binary signal
- Use Sound Output Configure to assigned Task ID for Sound Output Write
- Connect binary signal into Sound Output Write
- Adjust Numeric Constants N and delta: for frequencies of about 1000 Hz, a period has 0.001s, so delta has to be sufficiently small to allow at least 10 points per period, i.e., delta should be 0.0001 or smaller. Use N to control the length of the signal.

Playing WAV files



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Project 3

Project	Description	Team
A	Predict the max. temp. for the next day using previous days' temperatures, using polynomial and other models	8 (4/22 @8:51)
B	Predict the oil price for next week using previous weeks' prices, using polynomial and other models	6 (4/22 @9:56)
C	Detect the frequency spectrum of a given signal using Fourier Transforms	
D	Say the decimal number for a four-digit binary number	4 (4/22 @8:43)
E	Make a 8 keys piano	3 4/22 @8:53
F	Solve the quadratic equation with distinction of cases for the discriminant	1 (4/17 @9:47)
G	A VI that can calculate the areas of 4 different geometrical shapes	5 (3D) (4/17 @10:30) 7 (2D)
H	A VI that produces interesting sounds from the combination of 2 or more sine waves with different frequencies	10 (4/24)
I	A VI that produces a chirp sound, that is a	2

	sound whose frequency is changing with time	(4/30)
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LOGBOOK: [example of a logbook page](#)

- Use a quadrille notebook; number all pages; date all entries
- Write your notes for all activities, thoughts, problems and solutions, and learning conclusions related to Engin 103. You should write down progress, outcomes, and conclusions on projects and teamwork; conclusions from class work (including LabVIEW) and homework.
- In addition you should answer in the logbook all questions listed in these notes in blue, as shown below:

49) Insert a snapshot of the Front Panel of your team's VI for Project 3, describe each element shown and explain why they are there

50) Insert a snapshot of the Block Diagram of your team's VI for Project 3, describe each operation shown and explain why they are there

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