Real Time system Assignment 1:

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**Introduction:** We will be working on the reverb effect for this assignment.

**Challenges faced:   
Asio4All setup-** we were only getting garble noises from asio for all the options during runtime  
**Reverb Setup**- functional problems faced while setting up the reverb effect

**Process:** We derived the formula for the comb and all pass filter from the delay effect.

The comb filter formula was y[n] = x[n – d] + gy[n - d] which came to be delayOut = \_delayBuffer[index, (\_counter - \_FBDelay)] + (float)0.708 \* \_delayFBbuffer[index, (\_counter - \_FBDelay)];

and the all pass filter formula y[n] = -gx[n] + x[n - d] + gy[n – d] came out to be delayIn = -(float)0.708 \* \_delayRBbuffer[index, \_counter] + \_delayRBbuffer[index, (\_counter - \_FBDelay)] + (float)0.708 \* \_delayFBbuffer[index, (\_counter - \_FBDelay)];

We saved the result from the comb filter inside delayOut which we later transferred to a delay buffer \_delayRBbuffer[index, \_counter]. We used this buffer while we calculated the value for the all pass filter, which was later stored in \_delayFBbuffer[index, \_counter] . We tranfered the values in the output buffer as delayOut + 2 \* delayIn;

The pdf mentioned to set g as 0.708.

**Result:**

The result of our code was somewhat white noise which we have attached along with the submission.