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Lab 2 Speaker Buzz Report

The single tone is generated by Task_Speakerbuzz function by first checking to make sure that the SysTickCount_Nbr is larger or equal to the NextExecute, ie that it is time to make the next sound. Since NextExecute is dependent on DeltaExecute, this allows for the frequency of the tone to be set, because DeltaExecute is initialized based on 440 Hz that the tone makes. It then reads the GPIO pins and then XOR their values with 0X03 which makes the pin values opposite to what they were, thus allowing for the oscillation of the current in the speaker; therefore, resulting in the speaker making sound.

My approach for keeping track of the 750 mS interval was to create a new 32-bit int delta_toggle that stored the value of 750*the system tick frequency divided by 1000, similar to the way the interval was made in the first lab. I then declared another 32-bit int Speaker_toggle. Speaker_toggle was used to see if it was time to switch the tones. Then the program would check to see if Delta_execute was set at the 440Hz tone. If it was it would then set Delta_Execute to the 659Hz tone. It would then reset Speaker_toggle to equal the number of system ticks and delta_toggle (750mS interval).