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ECE5780/Lab 6 – Analog

1. Some of the GPIO pins have multiple analog functions. Since the analog bus isn't configurable these pins connect to all of their analog functions at the same time. Why doesn't this cause problems?
    - Because each analog bus has multiple channels with different enable and disable bits. Therefore we are able to control what information is being transmitted.
2. Consider a system where the DAC is updated every 4us (250 kHz) with a value from a 200-element wave table containing a single cycle of a waveform. What would be the frequency of the output wave?
    - 250kHz/200 = 1.25kHz
3. Consider that the ADC in 12-bit mode divides the input voltage range (0-3V) into 4096 steps. (where 0V is 0, and 3V is 4095)
    - What is the voltage/measurement resolution of the ADC? (what change in voltage does 1 bit in the output equal)
        - It represents 732.4 microvolts
    - What value would the ADC output if the input voltage was 1.75V? (round output to nearest integer)
        - 0b100101010101 or 0x955