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CSE325, Embedded Microprocessor Systems

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Lab Project 3

Lab 3 Questions

Q1: How many passes must the loop make so the delay will be as close to 25.25 ms as it can be, without exceeding that value?

A. 25.25ms = 25250000_{ns}. 25250000_{ns} / $160_{ns/pass}$ = <u>157812 passes</u>.

Q2: Let p be the solution to Q1. Given p, how many milliseconds will the busy loop delay for?

A. 157812_{pass} * $160_{ns/pass}$ = 25249920_{ns}. It will loop for <u>25.24992 ms</u>.

Q3: Please, please, explain to these engineers what they have done and provide some data to support your reasoning.

A. By reducing the frequency to 25% of its original value and not recalculating the number of passes to reach 25.25ms, the loop will delay 4 times longer than it should. Here the equation to find the correct number of passes that should be taken:
25.25ms = 25250000_{ns}. 25250000_{ns} / $640_{ns/pass}$ = <u>39453 passes</u>.