



## it was related to 7 segment i think

Let's address the Q5 parts stepwise, focusing on both the delay and human perceptibility for the 7-segment display counter:

### Q5b) Is the Q4 DELAY suitable for human-visible digit display?

**Based on our previous calculation:**

- The total delay produced by the given DELAY loop at 2 GHz is about **1.17 milliseconds** (ms).

### Human perception threshold:

- To see each digit distinctly as the 7-segment display counts down, you want at least **50–100 ms** per displayed digit (10–20 Hz blink rate or slower).
- **If you change digits every 1.17 ms:** The numbers would cycle far too quickly for the human eye—appearing as either a blur or not visible at all.

### Short, clear answer:

- **No, the delay used in Q4 is too short for a human to properly view each digit of the counter.** A much longer delay is needed (typically 50 ms or greater per digit).

### Q5b One-liner:

- **The Q4 delay is too short; increase it so each digit displays for at least 50 ms to be visible to the human eye.**

If you have more questions about 7-segment interfacing or want code to generate a suitable delay for human eye comfort, let me know!

