University of Cape Town

EEE4120F

High Performance Embedded Systems

EEE4120F Prac 4

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1 Testbench screenshots

Below are screenshots from our test bench. We have split all the values by digits for easier passing to the seven segment display. secs1 corresponds to the units digit and secs2 corresponds to the tens unit. Similar conventions were used for minutes and hours.

1.1 Seconds Overflow

Figure 1: Seconds Reaching 60 and Increasing Minutes

Above we can see that once seconds reaches past 59 it triggers the overflow_sec register which in turn counts the minutes up by one.

1.2 Minutes Overflow

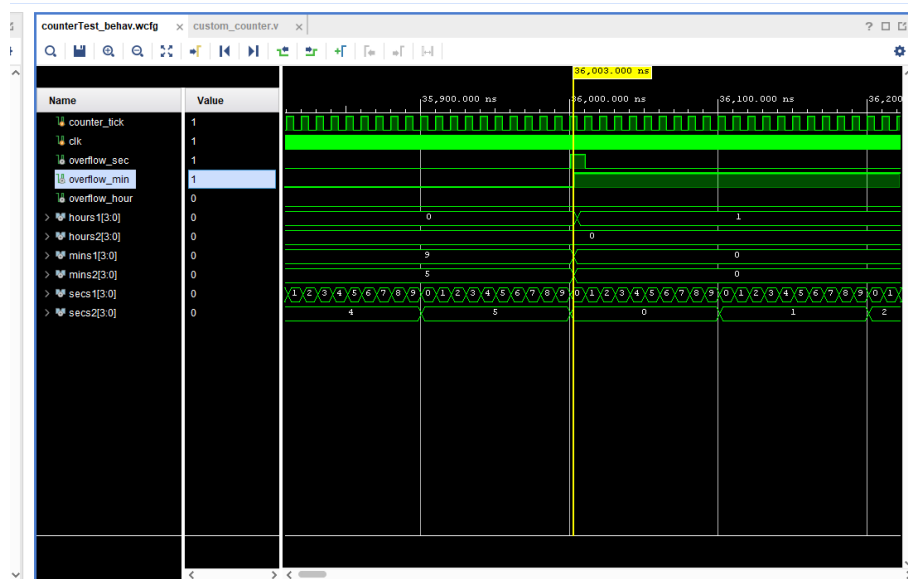Similarly for minutes overflowing to hours.

Figure 2: Minutes Reaching 59 and Increasing Hours

1.3   Hours Overflow
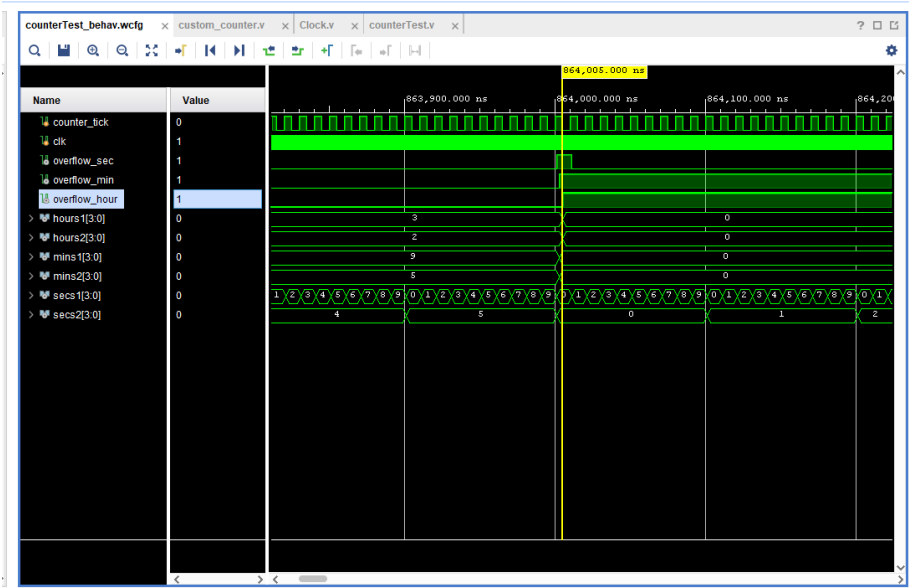
Finally the minutes and hour reset back to 00:00 after going past 23:59

Figure 3: Time Reaching 23:59 and Wrapping Back to 00:00