CS232-Lab5

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1   10-Modulo Counter

I used three important signals nextCount,incrNextCount and decrNextCount to store different cases of the inputs. First, I used 4-bit full adder-subtractors to obtain incrNextCount and decrNextCount from nextCount. Then, I used nested if blocks in a process with sensitivity variables clk and rst. I had to explicitly account for edge cases (when the count was close to 0 or 9) but otherwise I used the outputs from the 4-bit full adder-subtractors.

Finally there is a single process sensitive to rst and nextCount that updates the output pin of count with nextCount when it's changed.