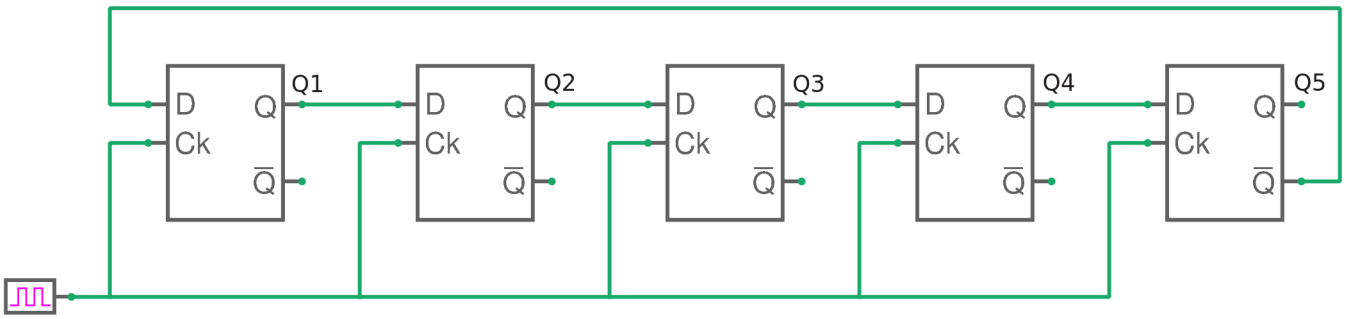
ring_counter.sqproj



Note: flip-flops are negative edge-triggered.

We are interested in the sequence produced by the counter shown in the figure, starting with the initial state $Q_1Q_2Q_3Q_4Q_5 = 00000$. For this purpose, we can prepare a table in the following format:

clock	Q_1	Q_2	Q_3	Q_4	Q_5	D_1	D_2	D_3	D_4	D_5	Q_1^{next}	Q_2^{next}	Q_3^{next}	Q_4^{next}	Q_5^{next}
1															
2															
3															
4															
5															
6															

Note that Q_1^{next}, Q_2^{next}, Q_3^{next}, Q_4^{next}, Q_5^{next} of the first row will be Q_1, Q_2, Q_3, Q_4, Q_5, respectively, of the second row, and so on.

Exercise Set

1. Plot the outputs Q_1, Q_2, Q_3, Q_4, Q_5 for the first 12 clock cycles.
2. Verify with simulation.