Divide by 60 Counter

In the course of designing a sixty second counter, you have elected to design a cascadable divide by six counter.

Part A Design a toggle cell using basic gates and transparent latch devices (do not implement the transparent latches). Inputs should be $CountEnable$ and $\overline{Clear}$. The output is Out.

Part B Now use this device (in icon form) to build a divide by six counter that does not cause problems at 50 seconds. Inputs should be $CountEnable$ and $ExternalClear$. Outputs should be Out_0, Out_1, Out_2 and $MaxCount$ which goes high when the output is at its maximum count.