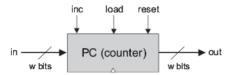
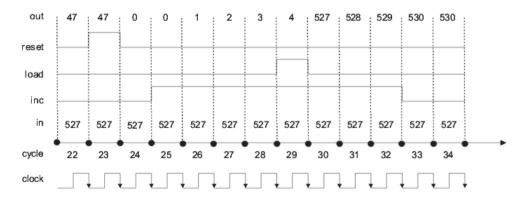
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We assume that we start tracking the counter in time unit 22, when its input and output happen to be 527 and 47, respectively. We also assume that the counter's control bits (reset, load, inc) start at 0—all arbitrary assumptions.

Figure 3.7: API for a counter chip; similar to register with two extra inputs:

 $inc = 1 \Rightarrow$ increment the counter's state every clock cycle, outputting the result.

 $reset = 1 \Rightarrow reset$ counter to 0.