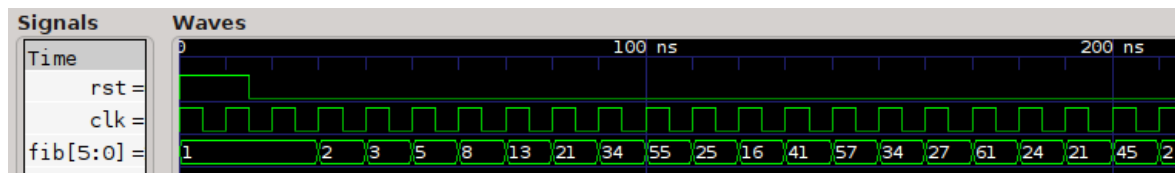## Fibonacci   X95484_en

Design a sequential circuit that generates the Fibonacci series. The circuit will represent the numbers with *n* bits and will generate the Fibonacci numbers *mod* 2^n. At each cycle, a new number must be generated. The following waveform illustrates the behavior of the circuit.

The circuit must be designed to represent the numbers with 6 bits.

Specification

```
module fibonacci( clk , rst , fib );
    input clk , rst ;
    output [5:0] fib ;
```

Input

- *clk* is the clock signal.

- *rst* is the synchronous reset signal.

Output

- *fib* is the Fibonacci number generated at each cycle.

Problem information