Sequential adder X09271_en

Design a circuit that calculates the addition of two numbers sequentially. The circuit has two inputs, *a* and *b* that provide one binary digit at each cycle (starting from the least-significant bits). At each cycle, the circuit produces a binary digit of the addition.

Here is an example of a sequence of cycles (note that time moves from right to left):

```
cycle:    ... 7 6 5 4 3 2 1 0
----------------------------
a:        ... 1 0 0 1 1 0 1 0
b:        ... 0 0 0 1 0 1 1 1
----------------------------
sum:      ... 1 0 1 1 0 0 0 1
```

Specification

module *sequential_adder* (*a*, *b*, *sum*, *clk*, *rst*);
input *a*, *b*, *clk*, *rst*;
output *sum*;

Input

- *a* and *b* are the two sequential inputs.
- *clk* is the clock signal.
- *rst* is the reset signal.

Output

- *sum* generates the addition of *a*and *b* sequentially.

Problem information

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