

---

## Half adder

X27385\_en

---

Design a **half adder** that is a circuit that performs the addition of two binary digits,  $a$  and  $b$ . It outputs the *sum* and the output *carry*.

### Specification

```
module halfadder(a, b, sum, carry);  
    input a, b;  
    output sum, carry;
```

### Input

- $a$  and  $b$  are the two input values.

### Output

- *sum* is the least significant digit of  $a + b$ .
- *carry* is the output carry, i.e., the most significant digit of  $a + b$ .

### Problem information

Author : Javier de San Pedro Martín

Generation : 2013-09-02 15:56:45

© Jutge.org, 2006–2013.

<http://www.jutge.org>