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Bitwise AND

The **AND** operation takes two bits and returns 1 if **both** bits are 1. Otherwise, it returns 0.

```
1 & 1  →  1
1 & 0  →  0
0 & 1  →  0
0 & 0  →  0
```

Think of it like a hose with two knobs. *Both* knobs must be set to on for water to come out.

When performing AND on two integers, the AND operation is calculated on each pair of bits (the two bits at the same index in each number).

```
5 & 6  # gives 4                                         Python 3.6 ▾

# At the bit level:
#    0101  (5)
#  & 0110  (6)
#  = 0100  (4)
```

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