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**4-input majority voter****X42168\_en**

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Design a circuit that implements a four-input majority voter. The circuit has four inputs ( $a$ ,  $b$ ,  $c$ , and  $d$ ) and two outputs called  $maj$  and  $tie$ . When there are more 1's than 0's or more 0's than 1's,  $maj$  will indicate which value has the majority, whereas  $tie$  will be 0. If there is the same number of 0's and 1's, then  $tie=1$  and the value of  $maj$  is irrelevant.

**Specification**

```
module voter4(a, b, c, d, maj, tie );
  input a, b, c, d;
  output maj, tie ;
```

**Input**

- $a, b, c$  and  $d$  are the four inputs.

**Output**

- $maj$  is the output indicating which value has majority.
- $tie$  is the output indicating there is a tie.

**Problem information**

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