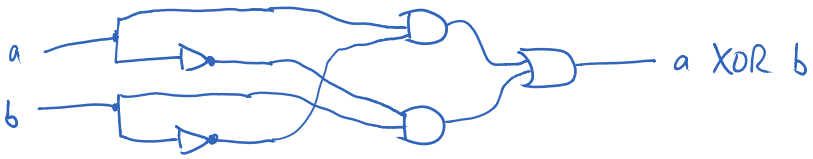
Hardware project - exploration of the XOR demo

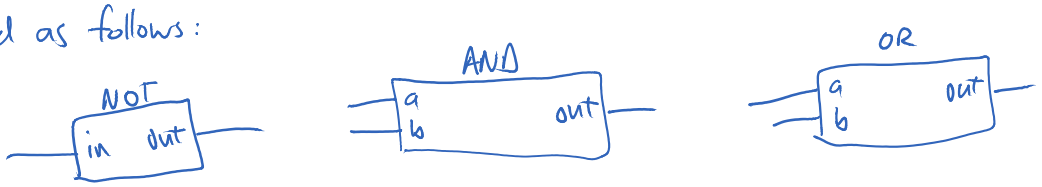
Recall how to build XOR out of AND, OR, & NOT:

$$XOR(a, b) = (a \text{ AND } \overline{b}) \text{ OR } (\overline{a} \text{ AND } b)$$

As a circuit:



In TECS ("The Elements of Computing Systems"), the relevant components have named pins, defined as follows:

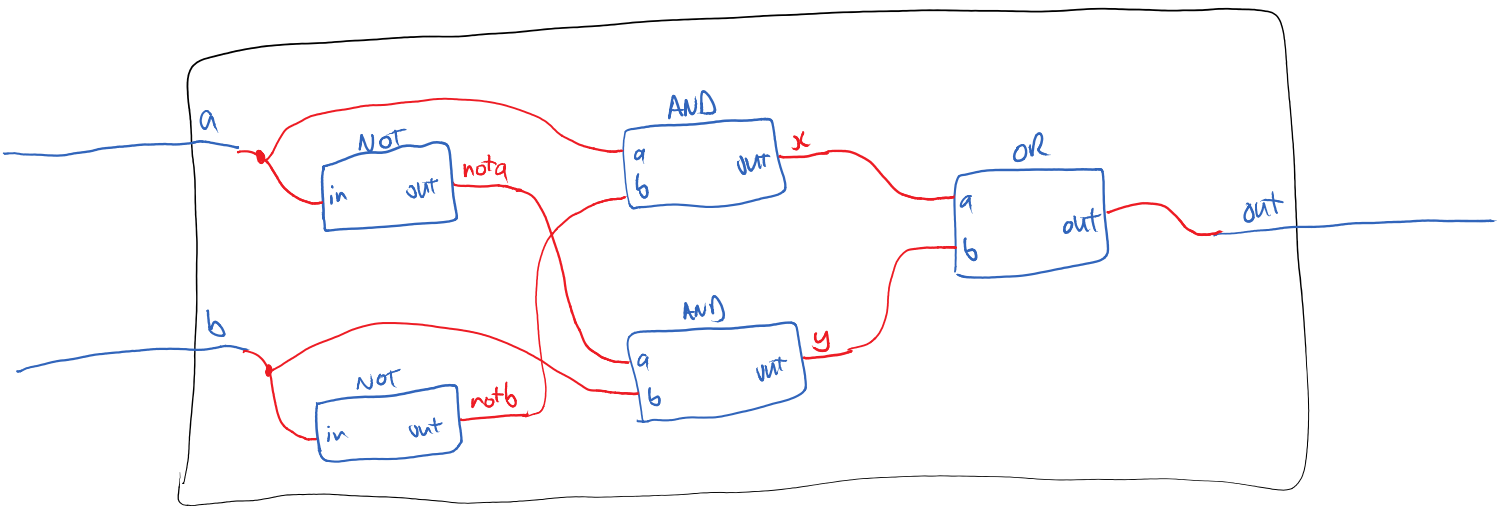


So we can lay out the XOR chip by connecting the named pins to named wires, as in the file Xor.hdl in the projects/demo directory:

```
CHIP Xor {
    IN a, b;
    OUT out;

    PARTS:
    Not (in=a, out=nota);
    Not (in=b, out=notb);
    And (a=a, b=notb, out=x);
    And (a=nota, b=b, out=y);
    Or (a=x, b=y, out=out);
}
```

XOR



- Make sure you can test individual inputs in the hardware simulator
- Make sure you can run the test script, Xor.tst