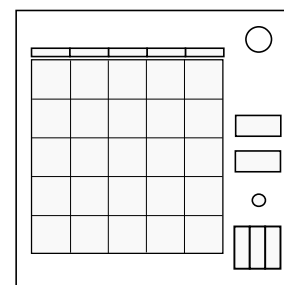


## On the Subject of Binary Grid

*There are 10 types of people in the world : those who understand binary, and those who don't.*



- The module consists of a 5x5 grid of zeroes and ones.
- Each square can be switched between 0 and 1 when pressed, and the original state of the grid can be restored by pressing the "Reset" button.
- The goal is to find the square to submit in three stages.
- To submit an answer, push the "Submit" button and press the square of your choice.
- Don't forget to push "Submit" again to get out of submit mode!
- The answer is in two parts : the row and column number.

### Key generation

#### Primary key

The first step of solving any stage is to find the primary key of the stage. The key consists of a series of 6 zeroes and ones. At each of the following assertions, if the answer is **true**, then the corresponding number is 1, otherwise, it is 0.

First number	Number of ones in the grid is <b>even</b> .
Second number	Stage 1 : Number of batteries is <b>even</b> .
	Stage 2 : There are <b>2 or more</b> port plates.
	Stage 3 : There are <b>less than 2</b> lit indicators.
Third number	Stage 1 : Number of ones is superior to the number of zeroes in the grid.
	Stage 2 : Number of zeroes is superior to the number of ones in the grid.
	Stage 3 : The number in the center square of the grid is a 1.

The last three numbers of the key are the same as the first three, with the 0 et 1 switched.

**Secondary key**

Using the primary key, you can now determine the secondary key of the stage. Below are different sets of grids with certain squares colored black. After selecting the grid corresponding to your primary key, you can read the secondary key by associating the black squares to the grid on the module and noting the values in those squares in reading order.

111000 	110001 	100011 	000111 
001110 	011100 	101010 	010101 

**Solution part 1 : row number**

With both keys, it is now possible to get the stage solution. For the row number, you need to count the number of ones and the number of zeroes in the two keys, and take the minimum between the two. You can then subtract  $x$  to that number to obtain the row number of the solution.  $x$  is determined as follow :

- If there are strikes,  $x = 1$ .
- Otherwise,  $x = 2$ .

**Solution part 2 : column number**

To find the column number, the primary key needs to be entered on the module, in the emplacements marked by the black squares. Once the key is entered, press the "Check" button. If the key has been correctly entered, the light above one of the columns should turn on, showing the column where the solution is. You can then submit the solution.