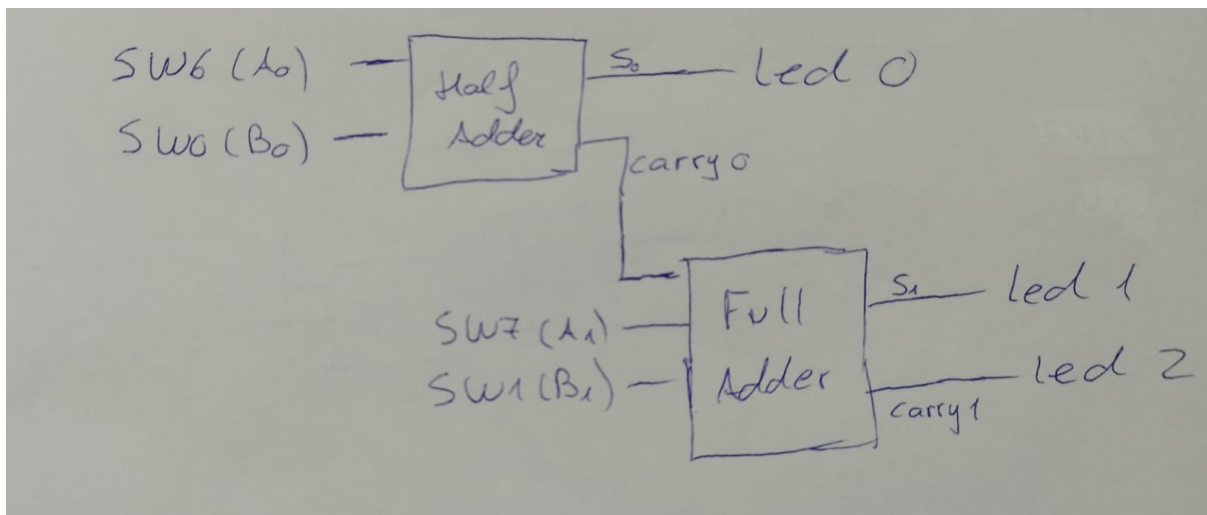


**QUESTION 1** Write the truth table of the circuit, obtained from the experimental results in the physical circuit that has been implemented in the lab.

Sw7	Sw6	Sw1	Sw0	2	1	0
0	0	0	0	0	0	0
0	0	0	1	0	0	1
0	0	1	0	0	1	0
0	0	1	1	0	1	1
0	1	0	0	0	0	1
0	1	0	1	0	1	0
0	1	1	0	0	1	1
0	1	1	1	1	0	0
1	0	0	0	0	1	0
1	0	0	1	0	1	1
1	0	1	0	1	0	0
1	0	1	1	1	0	1
1	1	0	0	0	1	1
1	1	0	1	1	0	0
1	1	1	0	1	0	1
1	1	1	1	1	1	0

**QUESTION 2** What is the functionality of this circuit? Explain what it does, according to the truth table.

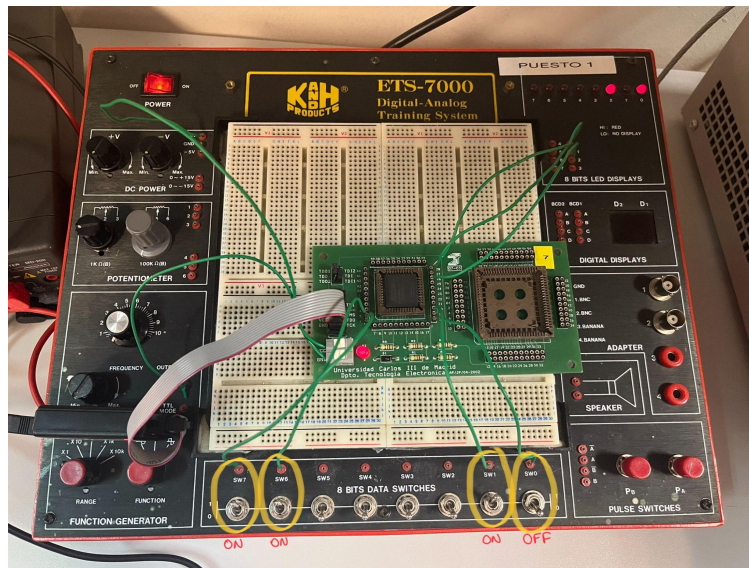


The functionality of this circuit is an adder of 4 inputs (or 2 logic vectors (1 down to 0)). It adds the switches SW6 and SW0 and the carry of that operation is used in a full adder with the other two switches SW7 and SW1. Each output corresponds to a led

**QUESTION 3** Open the compilation report in Quartus II. Look up the number of occupied logic cells and the occupation percentage of the device in this report.

3/64 (5%)

**QUESTION 4:** Find a configuration in the switches where the output LEDs 0 and 2 are on (output=5). Take a picture of this setup, clearly showing the digital trainer number, your circuit implementation, the LEDs turned on and the position of the switches.



Input=1110