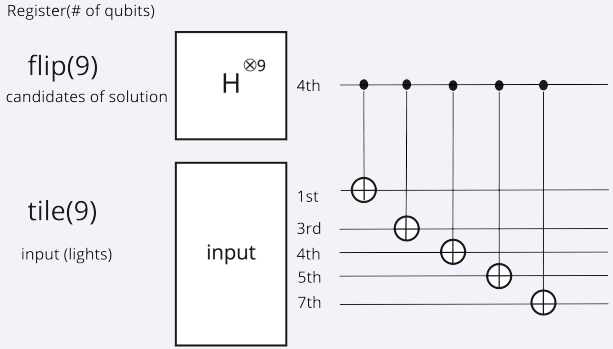
Hint 2-a

Qiskit

You can solve it by preparing a solution candidate (9-bit superposition state) and searching for a solution that can turn off the given board with Grover's algorithm. Why don't you prepare quantum registers to store the board, solution candidates, and oracle results?
Once you have solution candidates, you can apply CX gates from the solution candidate register(*flip*) to the board register(*tile*) to determine if it will turn off all the lights. For example, the figure shows a circuit in which the 1st, 3rd, 4th, 5th and 7th lights are inverted when the 4th light is pressed. By combining such circuits, you can create an oracle for finding solution candidates.



Please note that the registers for tile(9) and flip(9) in the diagram are not shown in the same order in Hint 2-A and Hint 2-B.

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