Add One to a Number

In this assignment you will be given a positive integer number as input. Your task is to write the number in binary and store it in a stack. You may refer to this wikipedia article on binary arithmetic if you require to brush up on them (https://en.wikipedia.org/wiki/Binary_number#Addition). Recall that the decimal numberr 10 has binary representation $(1010)_2$, where the leftmost bit is called the most significant bit (MSB) and the rightmost bit is the least significant bit (LSB).

Part 1: Given a number n as input, store the binary representation of the number in a stack such that the MSB is at the bottom of the stack and the LSB is at the top of the stack. For example, if input is 10, then the contents of the stack should be 0101 in top to bottom order. Print the contents of the stack in bottom to top order.

Part 2: Add 1 to the number. If 10 is given as input, then after the addition of 1, we will get 11, which in binary is $(1011)_2$. The main idea of this assignment is to do the addition on the stack. When we add one to an integer number, its LSB changes, even though whether the MSB will change or not depends on the number. Your program will implement of how the bits should be updated. For example, when we add 1 to 10, the stack contents in top to bottom order should change from 0101 to 1101. But, if the input number was 7, then the contents of the stack should change from $(111)_2$ to $(0001)_2$ in top to bottom order. Finally, print the contents of the stack in bottom to top order, and print the resulting number in decimal.

Note 1: You may use one or more separate stacks for temporary storage purpose.
Note 2: You will use linked list based representation of stacks. Anyone doing this assignment using lists will get 50% of marks obtained.

Submission: Name your submission as RollNo-Assign4.py and upload on Google classroom.