

## Problem 2:

### 1)Algorithm

My main idea is to use the pattern to get binary numbers. This pattern is as follows: starting from the beginning we can add 0 and 1 to get new binary numbers, and then we can do it for each subsequent element.

### 2)Code and description

You can find description of the code in `Efficient_Binary.cpp` file comments.

### 3)Complexity

Complexity of this code is of course  $O(n)$  as it depends on the linear iteration up to user's input.