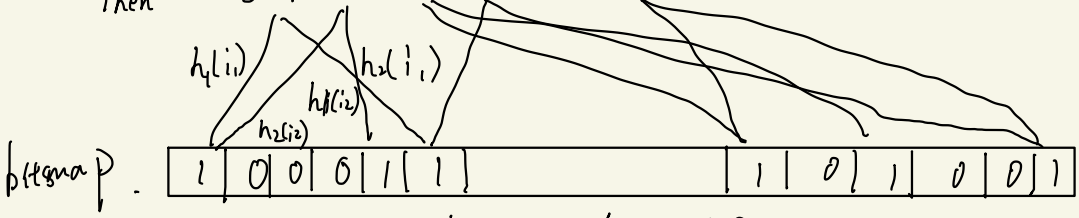
Input I[n]: 0 1 0 1 0 1 1 0 0 ----- n-bits sequence

when I[i] = 1. put it in the bloom filter

Then $\{i_1, i_2, i_3, i_4, \cdots i_x\}$ $0 \le x \le n$.

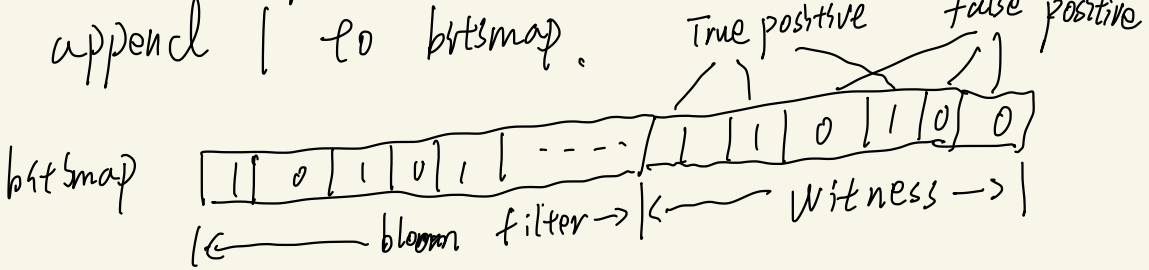


(-bits sequence

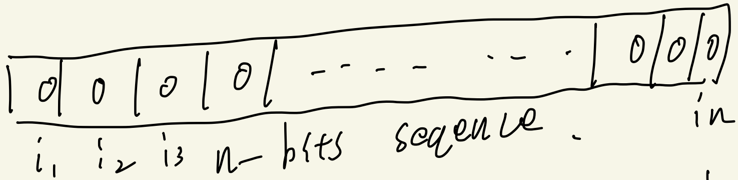
Then Append the witness to bitsmap.

for (0 → n) if bitsmap contain i

Then check I[i], if it is 0, then i is a false positive. Append 0 to bitmap, else append 1 to bitsmap.



Encoder

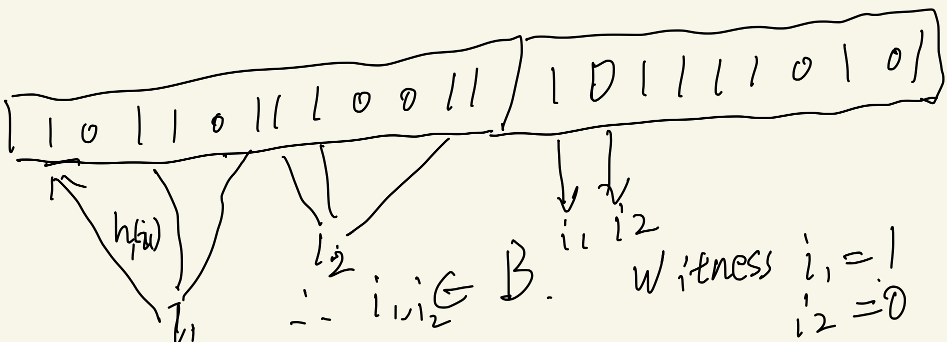
Output 

n-bits sequence.

for (0 → n) if bloom filter contains i

Then check it on witness. if witness is 1

Then $O[i] = 1$ else $O[i] = 0$.



∴ $i_1, i_2 \in B$. Witness $i_1 = 1$
$i_2 = 0$.

Then $O[i_1] = 1$.

$O[i_2] = 0$. → false positive.