Algorithm 1 Binary adding algorithm

Input: A sequence of n numbers A and a sequence of n numbers B

Output: A sequence of $n+1$ numbers $C = [c_1, c_2, ..., c_{n+1}]$;

1 **for** $i = 1$ **to** n

2 $\quad C[i] = (A[i] + B[i] + carry)\%2$;

3 $\quad carry = (A[i] + B[i] + carry)/2$

4 $C[i+1] = carry$;