Algorithm 1 Zig-zac

1: $a = (h_1, h_2, ...h_n)$
2: $s = (0, 0, ...n)$
3: $b = (1, 1, ...n)$
4: **for** i = 1 to n-1 **do**
5: **for** j = i - 1 down to 0 **do**
6: $s' = s_j$
7: $b_i = \begin{cases} b_j + 1, & \text{if } s' = 0 \vee (s' < 0 \wedge a_i - a_j > 0) \vee (s' > 0 \wedge a_i - a_j < 0) \\ b_i, & \text{otherwise} \end{cases}$
8: $s_i = \begin{cases} a_i - a_j, & \text{if } s' = 0 \vee (s' < 0 \wedge a_i - a_j > 0) \vee (s' > 0 \wedge a_i - a_j < 0) \\ s_i, & \text{otherwise} \end{cases}$