Exercise 1  (Precompute PSV)

The previous smaller value (PSV) array for an array $A$ of length $n$ is defined as

$$PSV_A[i] = \max\{-1 \cup \{j \mid 0 \leq j < i \land A[j] < A[i]\}\}$$

for all $0 \leq i < n$. Devise a linear time algorithm to compute $PSV_A$.

Exercise 2  (Enclose)

In Lecture 8 we have seen how the find_close operation can be solved in constant time with a data structure which just takes $o(n)$ extra space. Adapt the data structure to solve the enclose operation.

Exercise 3  (Reconstruct LZ)

Given the LZ factorization $(PrevOcc_0, LPS_0), \ldots, (PrevOcc_{z-1}, LPS_{z-1})$ of a text $T$. Devise a linear time algorithm to reconstruct $T$ from its LZ factorization.