

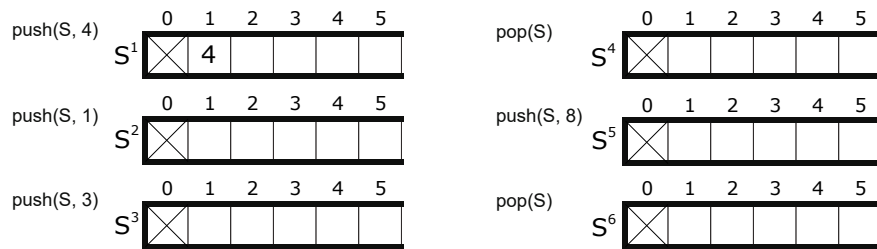
Algorithms and Data Structures

Algorithm Assignment: Lecture 3

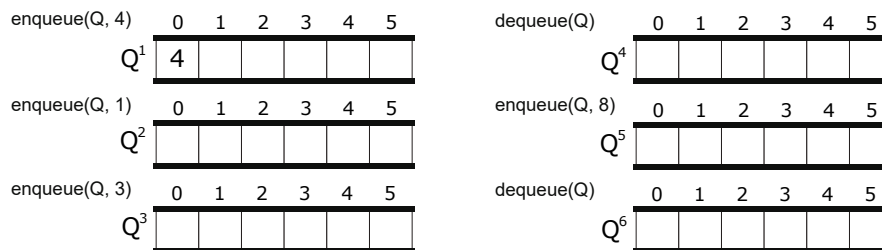
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1. Illustrate the result of operations $\text{push}(S, 4)$, $\text{push}(S, 1)$, $\text{push}(S, 3)$, $\text{pop}(S)$, $\text{push}(S, 8)$, and $\text{pop}(S)$ on an initially empty stack S implemented by an array. Each operation should be performed in $O(1)$.



2. Illustrate the result of operations $\text{enqueue}(Q, 4)$, $\text{enqueue}(Q, 1)$, $\text{enqueue}(Q, 3)$, $\text{dequeue}(Q)$, $\text{enqueue}(Q, 8)$, and $\text{dequeue}(Q)$ on an initially empty queue Q implemented by an array. Each operation should be performed in $O(1)$.



3. The following figures show operations of $\text{insert}(L, x)$ and $\text{insert}(L, y)$ on an initially empty doubly linked list L . Write pseudo codes for operations from (1) to (8).

