

(1) For a given Stack, the push order with three elements is  $a$ ,  $b$  and  $c$ . List all the possible popping sequences for these three elements.

(2) Convert Decimal to Octal using Stack. Write the pseudocode for this function.

For example:

Input:  $1348_{10}$

Output:  $2504_8$

(3) Implement a queue using two stacks. Discuss about how to add and remove element from the queue. Please provide the pseudocode for the `add()` and `remove()` operations

(4) For a given graph  $G$ , try to find a simple path from node  $i$  to node  $s$ . Write the pseudocode for this function.

*Hint: Depth First Traversal*