Lab Assignment: Implement Queue using Two Stacks

Problem Statement

Implement a Queue using two stacks. The queue should support the basic operations `enqueue` and `dequeue` by making use of stack operations.

Function Signatures

- `void enqueue(int value);` // Insert an element into the queue
- `int dequeue();` // Remove an element from the queue
- `int isEmpty();` // Check if the queue is empty
- `int isFull();` // Check if the queue is full

Algorithm Outline

1. Maintain two stacks: `stack1` and `stack2`.
2. For `enqueue(x)`:
   - Push the element `x` onto `stack1`.
3. For `dequeue()`:
   - If `stack2` is empty, transfer all elements from `stack1` to `stack2` by popping from `stack1` and pushing onto `stack2`.
   - Pop the top element from `stack2`, which represents the front of the queue.
4. This ensures that insertion happens in `stack1` and deletion happens in `stack2`, simulating queue behavior.