Practice Problems
Queue

Consider the following methods of the Queue class:

```
boolean isEmpty():     returns true if the Queue is empty.
int size():            returns the number of elements in the Queue.
void enqueue(T elem): adds an element to the rear of the Queue.
T dequeue():           deletes & returns the front element from the Queue.
T peek():              returns the front element from the Stack.
```

1. Write a function(pseudocode) that takes a queue of characters and prints them in reverse order. You can use 1 additional queue (no additional data structure). What is the space and time complexity of your solution?

   Example:

   ```
   Input: [a,b,b]
   Output: b,b,a
   Input: [a]
   Output: a
   Input: [a,b,a,b]
   Output: b,a,b,a

   void reverse(Queue s):
   ```

2. Implement a Queue class using 2 Stacks (i.e. use the Stack operations `size()`, `push()`, `pop()`, `peek()`, `isEmpty()` to implement `enqueue()` and `dequeue()`)

3. Implement a Stack class using 2 Queues (i.e. use the Queue operations `size()`, `enqueue()`, `dequeue()`, `peek()`, `isEmpty()` to implement `push()` and `pop()`)