CSE291 Data Structures Lab

Lab Sheet 4

Queues

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1. Write a program to implement enqueue and dequeue using arrays.
2. Implement a queue using two stacks.
3. Implement a method splitq(), to split a queue into two queues so that all items in odd positions are in one queue and those in even positions are in another queue.
4. Write a routine REVERSEQ that will reverse all the elements in a queue.

   Example:

   Queue

0	12	8	5	

   Queue after reversing

5	8	12	0	

5. Implement a program to perform enqueue and dequeue in a circular Queue using arrays.
6. Write a routine REVERSECQ that will reverse all the elements in a circular queue.
7. A string is said to be a palindrome if it does not change when the order of characters in the string is reversed. For example, MADAM, ABLE WAS I ERE I SAW ELBA are palindromes. Use your Queue class and the Stack class in a program that reads a string of characters, one character at a time, pushing each character onto a stack as it is read and simultaneously adding it to a queue. When the end of the string is encountered, the program should use the basic stack and queue operations to determine if the string is a palindrome.

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