

Assignment-4

Stacks, Queues

Q1. Write a program to reverse a string using stack.

Q2. Convert an infix notation to prefix and postfix notation.

Q3. For a given queue, Q, write a recursive function to shuffle the values stored in first half of queue with the second half of it in an alternate manner. The first and the last values of the queue is not affected by the shuffle. For example, (LHS is front of queue and RHS as rear of queue)

Example 1:

Input Q: 1 2 3 4 5 6

Output Q: 1 5 3 4 2 6

Example 2:

Input Q: 7 4 6 2 1

Output Q: 7 2 6 4 1

Q4. Given a queue, shuffle values of the queue, such that the smallest element is shifted to the end of the queue without changing the basic ordering of the elements in the queue. Further, write a modified stack for the same function such that the smallest element is shifted to the top of the stack without changing the ordering of the other elements.