

Queues - Take Home Problems

Do the given problems using JavaScript.

1. Write a Program to reverse the queue using recursion.
2. Write a Program to design a stack with the help of only queues.
3. Write a Program to reverse the first k elements of the queue.
4. Write a Program to find the first circular tour that visits all petrol pumps and return -1 if no such tour exists.

Input: `arr[] = {{4, 6}, {6, 5}, {7, 3}, {4, 5}}`.

Output: 1

Explanation: If started from 1st index then a circular tour can be covered. There are N petrol pumps (say `arr[]`) that are present in a circular path. It consists of the distance of the next petrol pump from the current one (in `arr[i][1]`) and the amount of petrol stored in that petrol pump (in `arr[i][0]`).

The problem is to find the index of the first starting point such that the truck can visit all the petrol pumps and come back to that starting point. (Assume a truck with infinite capacity that consumes 1 unit of petrol to travel 1 unit distance.)