

CS11001/CS11002

**Programming and Data Structures
(PDS) (Theory: 3-0-0)**

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End Semester Exam

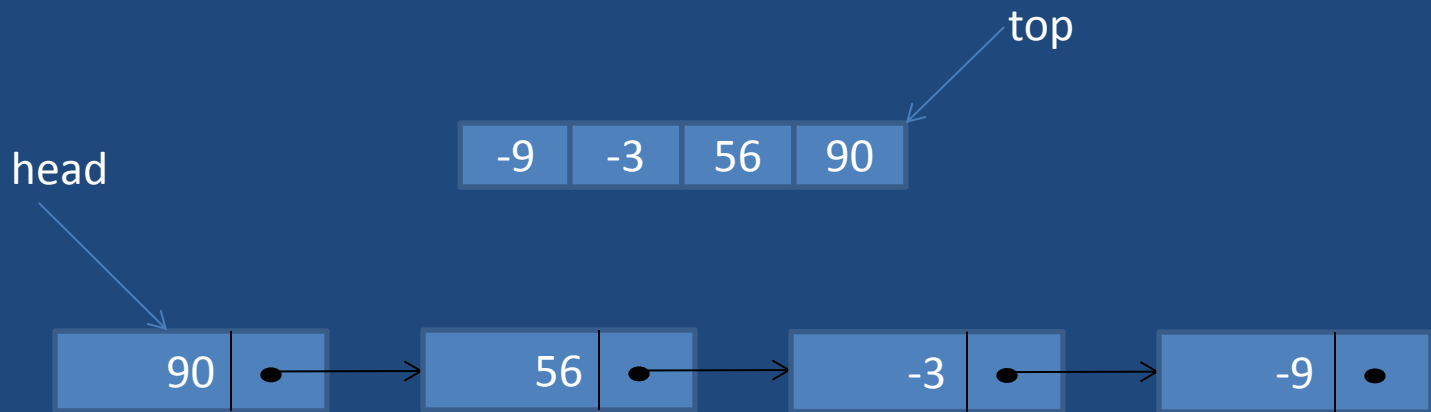
- Syllabus: From first class upto this class.
- DO NOT forget to mention your section number. That may lead to mistake in tabulation (you are marked as absent in the grade sheet)
- DO NOT use pencil for answering questions.

Example 4: Given a stack, print the Next Greater Element (NGE) for every element.

- For any stack the bottom most element always has next greater element as -1
- For a stack which is sorted in decreasing order, all elements have next greater element as -1.
- For the input stack [4, 5, 2, 25], the next greater elements for each element are as follows.

Element	NGE
4	5
5	25
2	25
25	-1

Example 5: Implement a Stack using a Linked List

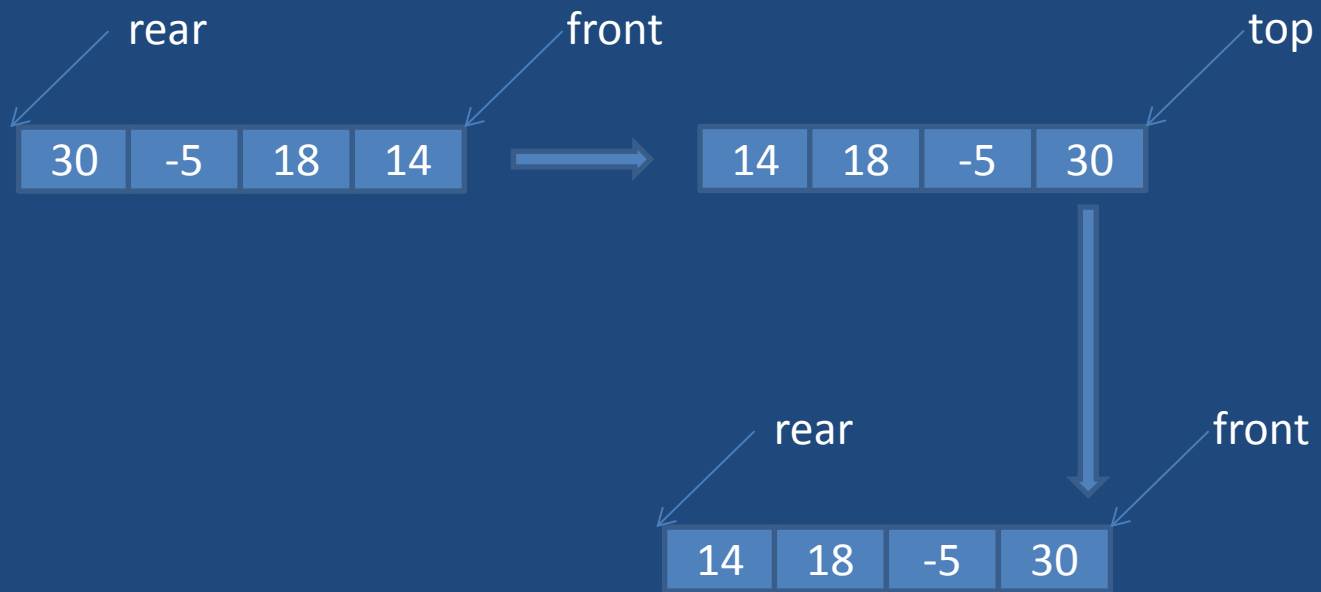


Example 6: Print first N Fibonacci Numbers using a Queue

The queue initially contains 0 and 1

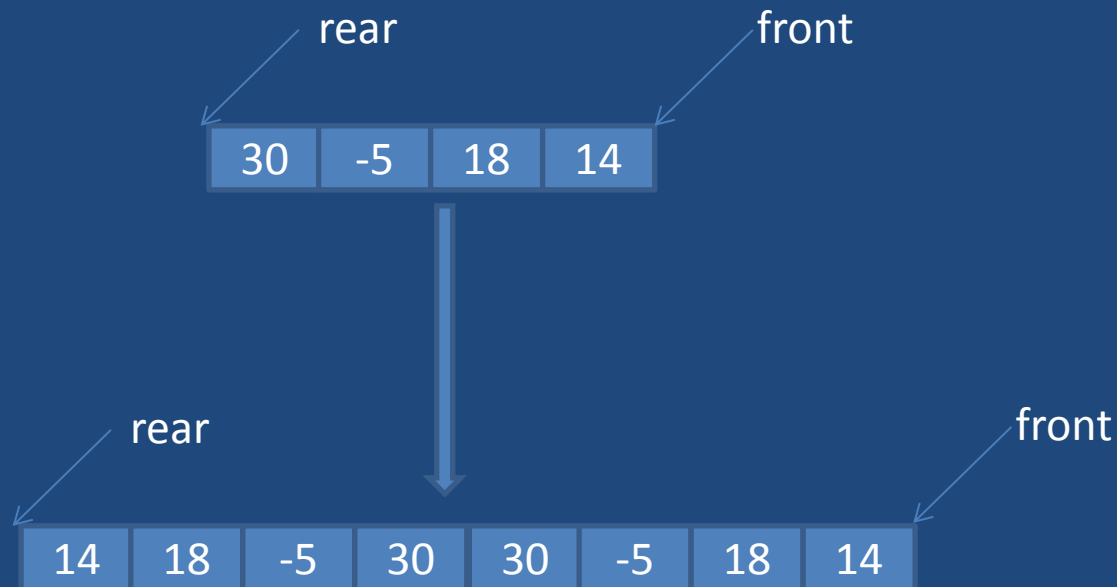


Example 7: Use a Stack to reverse a Queue



Example 8: Create a new Queue with given elements appended at the end of the Queue in a reverse order

* Hint- You can use a stack in order to achieve the outcome



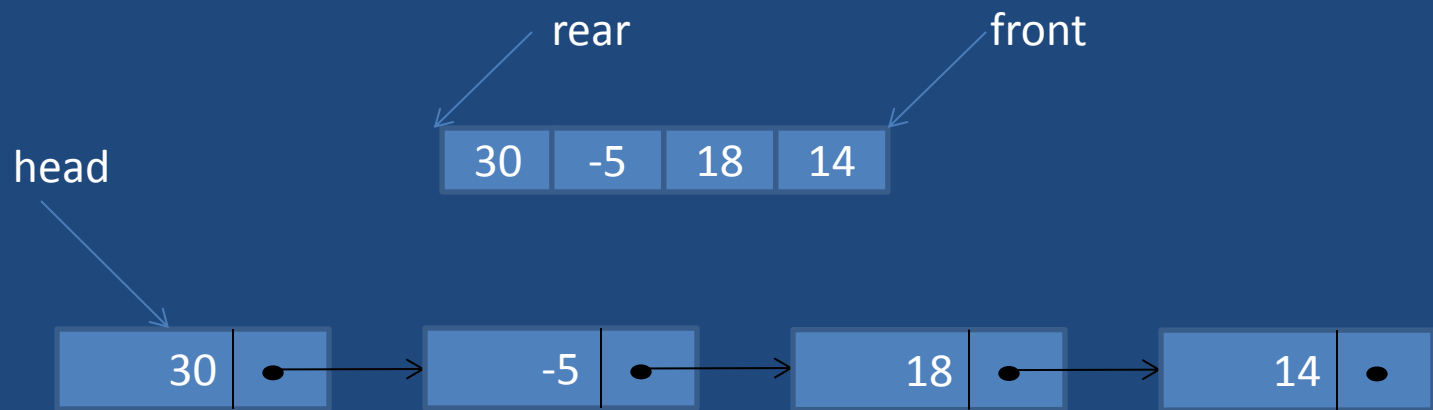
Example 9: Implement a Stack using a Queue data structure

For a given stack create a same size array which you are going to use as a Queue.

Push and pop operation of stack's should be emulated with the Enqueue and Dequeue operation.

You can use an intermediate Queue for the above implementation.

Example 10: Implement a Queue using a Linked List



Question

- Can you implement a queue using two stacks?
 - If yes do it.
 - If no explain why.