Tuesday, 11 August 15

Crux

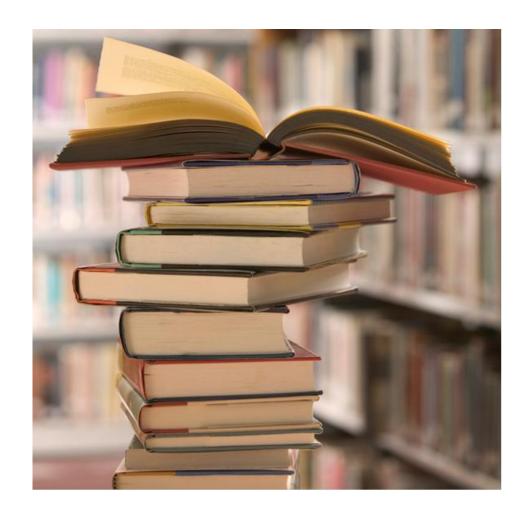Data Structures -2

Stacks and Queues

Manisha Khattar

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Recursion and Pile of Books

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Stacks

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Stacks

```
class Stack{
    // accessor methods
    int size();
    boolean isEmpty();
    Object top() throws StackEmptyException;
    // update methods
    void push (Object element);
    Object pop() throws StackEmptyException;
}
```

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How to implement Stack Class?

1. Arrays
2. Linked List

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Lets Implement Our Own Stack Class Using Array

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Homework : Implement Stack Class Using Dynamic Arrays

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Your Turn: Implement Stack Class Using Linked List

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Lets solve few problems

1. Given an expression check if brackets are balanced e.g. { a + [b+ (c + d)] + (e + f) }
2. Reverse a Stack with the help of another empty stack

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Queues

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Queue

```
class Queue{
    // accessor methods
    int size();
    boolean isEmpty();
    Object front() throws QueueEmptyException;
    // update methods
    void enqueue(Object element);
    Object dequeue() throws
    QueueEmptyException;
}
```

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How to implement Queue Class?

1. Linked List
2. Arrays

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Lets Implement Our Own Queue Class Using Array

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Homework : Implement Stack Class Using Dynamic Arrays

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Your Turn: Implement Queue Class Using Linked List

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Lets solve few problems

1. Reverse a Queue
2. Implement a Stack using Two Queues

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Thank You!

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