C++

LAUNCHPAD

CODING BLOCKS

Lecture-17

Data Structures

- Stacks
- Queues

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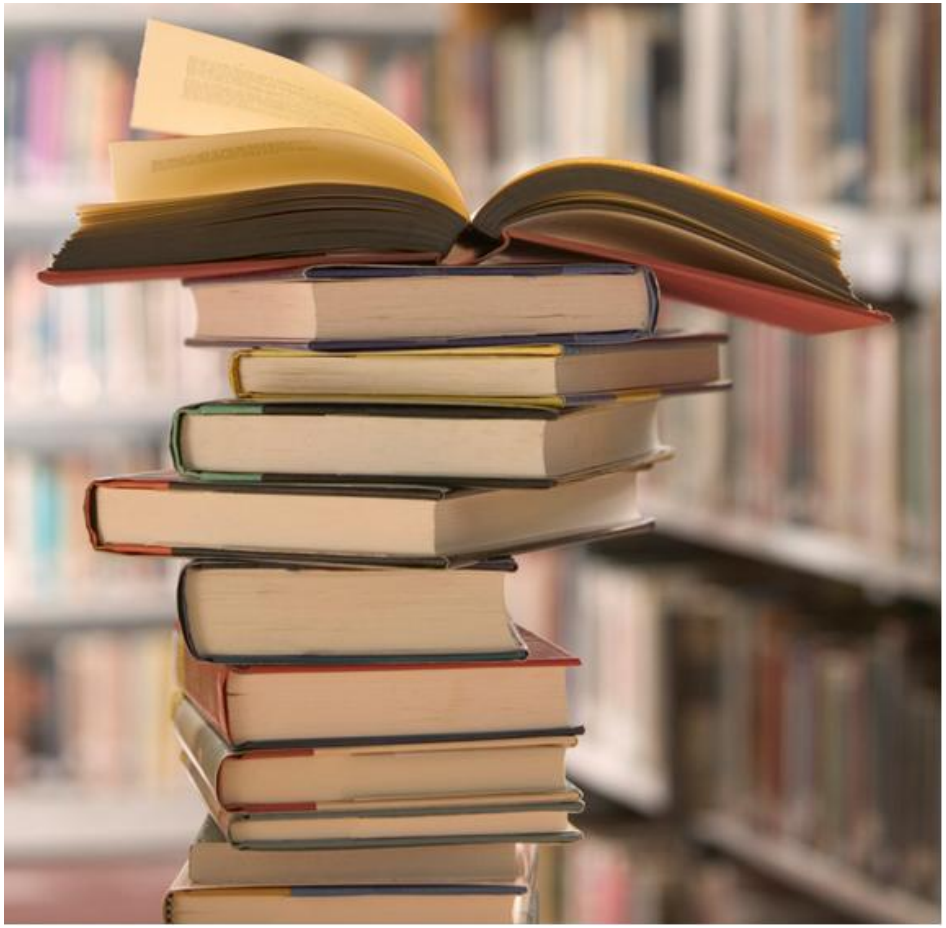
Vector

Recursion and Pile of Books



CODING BLOCKS

Stacks

Stacks

```
Struct Stack{
    // accessor methods
    int size();
    bool isEmpty();
    int top();
    // update methods
    void push (int element);
    void pop();
}
```

How to implement Stack Class?

1. Arrays
2. Linked List

Lets Implement Our Own Stack Class Using a Vector

Templates

Your Turn: Implement Stack Class Using Linked List

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 recursion(stack)

Queues

Queue

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

How to implement Queue Class?

1. Linked List
2. Arrays

Lets Implement Our Own Queue Class Using Vectors/Arrays

Your Turn: Implement Queue Class Using Linked List

Lets solve few problems

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

CODING BLOCKS

Thank You!

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