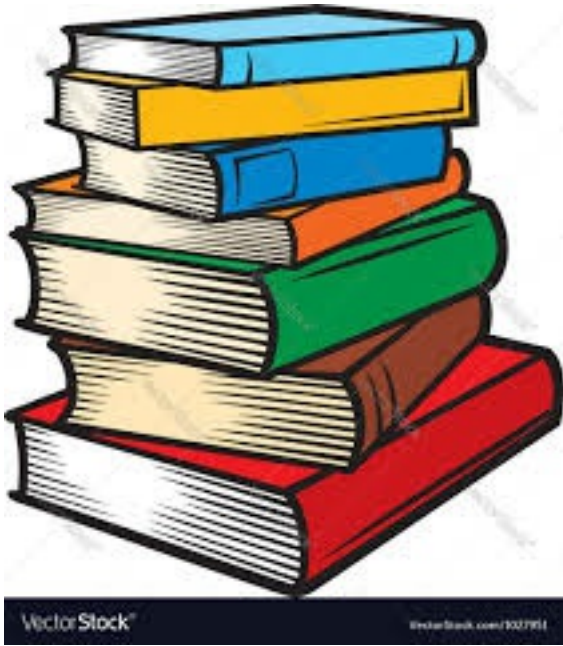


Stack



It is an abstract data stype (interface)

- LIFO structure: last in first out
- In most high level languages, a stack can be easiky implemented either with arrays or linked lists

Basic Operations

Pop()

Push()

Peek()

Push Operation

Put the given item to the top of the stack

Very simple operation, can be done in $O(1)$

```
stack.push(56)
```

Pop Operation

We take the last item we have inserted to the top of the stack (LIFO)

Very simple operation, can be done in $O(1)$

```
stack.pop()
```

Peek Operation

Return the item from the top of the stack without removing it

Very simple operation, can be done in $O(1)$

```
stack.peak()
```

Bonus: Applications

- In stack-oriented programming languages
- Graph algorithms: depth-first search can be implemented with stacks (or with recursion)
- Finding Euler-cycles in a graph
- Finding strongly connected components in a graph

Bruna Santos - March 29, 2018 10:50 am