# Data Structures (CPA250)

*Lab03 - Stack Data Structure*

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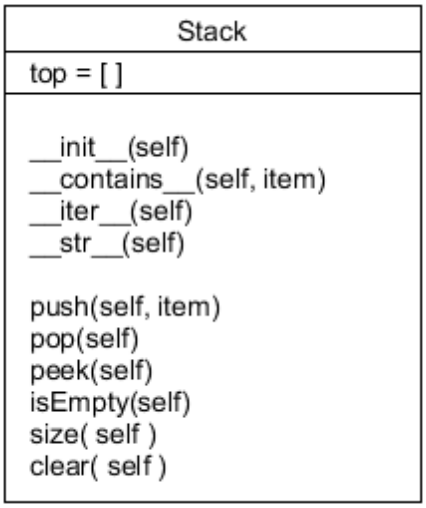
## 1 Stack data structure

Write code for Stack abstract data type ADT




1. Object: Collection of data items such that last-in first out (LIFO) mechanism is maintained
2. Operations
   - push(x): adds an element x on the top of the stack
   - pop(): removes the top element of the stack. The next element will become the top element
   - isEmpty(): It returns true if the stack is empty, otherwise false
   - peek(): It returns the top element without removing it from the Stack
   - size(): It returns the number of items in the stack
   - display(): It displays all the elements stored in the stack
   - find(item): return true if item is found in the stack

## 2 Applications of Stack data structure

**Write code for the following applications of Stack data structure**

1. check parenthesis matching in an expression.
2. evaluate postfix expressions
3. convert infix form to postfix form
4. check brackets