

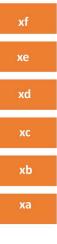
Stacks

Stack overflow

Every stack has a size that determines how many nodes it can accommodate. Attempting to push a node in a full stack will result in a stack overflow. The program may crash due to a stack overflow.

A stack is illustrated in the given image.

stackA.push(xg) will result in a stack overflow since the stack is already full.



stackA

The stack data structure

A stack is a data structure that follows a last in, first out (LIFO) protocol. The latest node added to a stack is the node which is eligible to be removed first. If three nodes (a , b and, c) are added to a stack in this exact same order, the node c must be removed first. The only way to remove or return the value of the node a is by removing the nodes c and b.

Main methods of a stack data structure

The stack data structure has three main methods: push(), pop() and peek(). The push() method adds a node to the top of the stack. The pop() method removes a node from the top of the stack. The peek() method returns the value of the top node without removing it from the stack.

