**Java - The Stack Class**

Stack is a subclass of Vector that implements a standard last-in, first-out stack.

Stack only defines the default constructor, which creates an empty stack. Stack includes all the methods defined by Vector, and adds several of its own.

Stack( )

Apart from the methods inherited from its parent class Vector, Stack defines the following methods −

|  |  |
| --- | --- |
| **Sr.No.** | **Method & Description** |
| 1 | **boolean empty()**  Tests if this stack is empty. Returns true if the stack is empty, and returns false if the stack contains elements. |
| 2 | **Object peek( )**  Returns the element on the top of the stack, but does not remove it. |
| 3 | **Object pop( )**  Returns the element on the top of the stack, removing it in the process. |
| 4 | **Object push(Object element)**  Pushes the element onto the stack. Element is also returned. |
| 5 | **int search(Object element)**  Searches for element in the stack. If found, its offset from the top of the stack is returned. Otherwise, .1 is returned. |

Example

The following program illustrates several of the methods supported by this collection −

import java.util.\*;

public class StackDemo {

static void showpush(Stack st, int a) {

st.push(new Integer(a));

System.out.println("push(" + a + ")");

System.out.println("stack: " + st);

}

static void showpop(Stack st) {

System.out.print("pop -> ");

Integer a = (Integer) st.pop();

System.out.println(a);

System.out.println("stack: " + st);

}

public static void main(String args[]) {

Stack st = new Stack();

System.out.println("stack: " + st);

showpush(st, 42);

showpush(st, 66);

showpush(st, 99);

showpop(st);

showpop(st);

showpop(st);

try {

showpop(st);

} catch (EmptyStackException e) {

System.out.println("empty stack");

}

}

}

This will produce the following result −

Output

stack: [ ]

push(42)

stack: [42]

push(66)

stack: [42, 66]

push(99)

stack: [42, 66, 99]

pop -> 99

stack: [42, 66]

pop -> 66

stack: [42]

pop -> 42

stack: [ ]

pop -> empty stack