**Stack**

**Overview:**

* The **std::stack** is a container adapter class in the C++ Standard Library that implements the stack data structure.
* It follows the LIFO (Last In, First Out) principle, where the most recently added element is the first one to be removed.
* The **std::stack** is defined in the **<stack>** header file.

The Time And Space complexity of the functions used.

1. **push(element)**:
   * Inserts the **element** at the top of the stack.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
2. **top()**:
   * Returns a reference to the top element of the stack without removing it.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
3. **empty()**:
   * Returns a boolean value indicating whether the stack is empty or not.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
4. **size()**:
   * Returns the number of elements present in the stack.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
5. **pop()**:
   * Removes the top element from the stack.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
6. **swap(stack)**:
   * Exchanges the contents of two stacks of the same type efficiently.
   * Swaps the underlying containers of the stacks.
   * Time Complexity: O(1)
   * Space Complexity: O(1)
7. **operator=(assignment operator)**:
   * Assigns one stack to another stack of the same type.
   * Copies the elements from the source stack to the target stack.
   * Time Complexity: O(n), where n is the number of elements in the source stack
   * Space Complexity: O(n), where n is the number of elements in the source stack