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