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REG.NO: D/BCS/23/0008

**String Modification:**

Time Complexity:

O(n)

Iterates through each character once.

Space Complexity:

O(n)

Creates a new string with modified characters.

**Stack and Queue Operations:**

Pushing to Stack and Adding to Queue:

Time Complexity:

O(n/2)

Iterates through half of the characters.

Space Complexity:

O(n/2)

Stores half of the characters in both the stack and the queue.

**Stack and Queue Comparison:**

Time Complexity:

O(n/2)

Iterates through half of the characters.

Space Complexity:

O(1)

Uses a constant amount of extra space.

**Palindrome Check:**

Calling isPalindrome Method:

Time Complexity:

O(n)

Calls the isPalindrome method once.

Space Complexity:

O(n)

Additional space for variables used in the isPalindrome method.