Time Efficiency Analysis

The efficiency of pushing *n* elements to the stack would be O(n). This is because each push to the stack takes O(1). This is because the tail points to the last element, so there is no need to iterate through the list to reach the final element. $O(1) \times n = O(n)$

The efficiency of popping *n* elements to the list would be $O(n^2)$. This is because each pop from the stack takes O(n). This is because to retrieve the penultimate element, it needs to iterate through the preceding elements. This would take O(n). $O(n) \times n = O(n^2)$