Assignment # 2 hand analysis

Users:
1. Administrator
    a. Check if a word, phrase, or sentence is palindrom

2. Client
    a. Check if a word, phrase, or sentence is palindrom

System: Stack
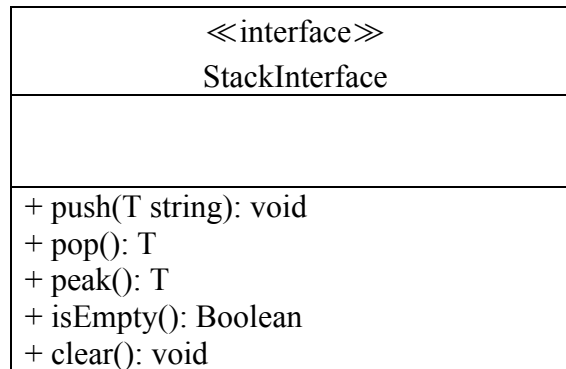Use case: Add new element
Actor: Administrator
Steps:
1. Administrator enters identifying data
2. System confirms eligibility to enter
3. Administrator choses a new element to be added
4. System checks for empty space in the stack
    a. If there is space, the element is added to the top of the stack
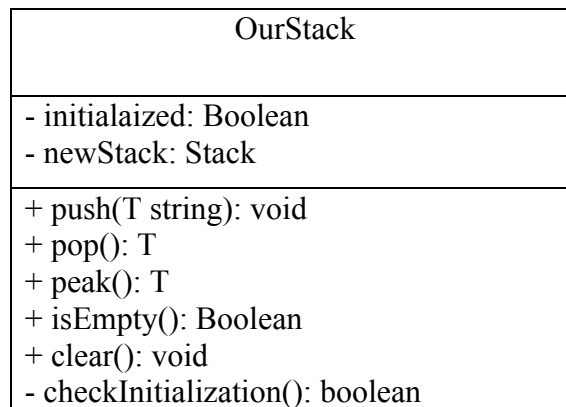5. System confirms the addition
6. System displays the element added

CRC card for a stack class

Stack
Responsibilities
• Add an element
• Remove the stack top element
• Retrieve the stack top element
• Empty the stack
• If the stack is empty
Collaborations
• Administrator
• Element

UML diagram for the interface StackInterface

≪interface≫
StackInterface
+ push(T string): void
+ pop(): T
+ peak(): T
+ isEmpty(): Boolean
+ clear(): void

UML diagram for OurStack class

OurStack
- initialaized: Boolean
- newStack: Stack
+ push(T string): void
+ pop(): T
+ peak(): T
+ isEmpty(): Boolean
+ clear(): void
- checkInitialization(): boolean

Pseudo code for finding a palindrom:
1. Get the string of interest
2. Find the number of characters that it contains
    a. The string is not a pelindrom, if the number of character is even and end the process
    b. Continue to step 3, if the string has odd number of characters
3. Divide the character number -1 by 2 to find the middle of the string
4. Push the string to the actual stack, and temporary stack
5. Pop the temporary stack and push it into a reversed stack
6. Pop the actual stack and the reversed stack and compare
    a. Stop the operation and output non pelindrom, if the two are not the exact same character
    b. If the two are the same characters, discard them and repeat step 6 again until it reaches the end of stack