**Design 4**

**By 1686498**

| **Palindrome** |
| --- |
| String originalString – stores the original string<br>string reversedString – stores the reversed string<br>bool isPalin – stores whether it is a palindrome or not |
| Bool isPalindrome – checks if the string is a palindrome<br>string reverseString – reverses the original string |

- Stores the original string and the reversed string and whether it is a palindrome
- isPalindrome will check if it is a palindrome and return whether it is or isnt
- reverseString will reverse the original string

| **Fibonacci** |
| --- |
| |
| Int calcFib – takes in an input n and returns the nth fibonacci number |

- Will take in a number and will return the corresponding fibonacci number

| **EfficientFibonacci** |
| --- |
| Int calculated[47] – an array of the 47 integers of fibinacci<br>vector<int> calculated – stores the calculated values of fibonacci |
| Int calcFib – takes in an input n and returns the nth fibonacci number<br>void storeFib – stores the fibonacci number |

- Will store previously calculated values so that fibonacci doesnt need to keep recalculating values
- will do the same as fibonacci and will return the nth fibonacci number

**Main:**

- will take in a string
- will split up the string into the bit that needs to go though palindrome and the bit that needs to go in the fibonacci
- will return the reversed string, whether it is or isnt a palindrome and the nth fibonacci number
- will return an error if the second part isnt a number

**Design 4**

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**Testing:**

Input 1:

apple 6

Output 1:

elppa no 8

Input 2:

appa 20

Output 2:

appa yes 6765

Input 3:

glenelg sa

Output 3:

glenelg yes ERROR

Input 1:

apple 6

Output 1:

elppa no 8

Input 1:

apple 6

Output 1:

elppa no 8