Code -collections

1. Two Sum

Given an array of integers nums and an integer target, return indices of the two numbers such that they add up to target.

You may assume that each input would have exactly one solution, and you may not use the same element twice.

You can return the answer in any order.

Example 1:

Input: nums = [2,7,11,15], target = 9

Output: [0,1]

Explanation: Because nums [0] + nums [1] == 9, we return [0, 1].

Example 2:

Input: nums = [3,2,4], target = 6

Output: [1,2]

Example 3:

Input: nums = [3,3], target = 6

Output: [0,1]

Solution:

```
class Main {
```

```
   public static void main(String[] args) {
      int[] arr = {2, 7, 11, 15};
      int target = 9;

      for (int i = 0; i < arr[i]; i++) {
         for (int j = i + 1; j < arr[j]; j++)
          {
            if (arr[i] + arr[j] == target) {
               System.out.println("\n hence the Array will be : [" + arr[i] + ", " +
arr[j] + "]");
               System.out.println("AT Index: [" + i + ", " + j + "]");
               return;
            }
         }
      }

      System.out.println("No solution found.");
   }
}
```

Given an integer x, return true if x is a

palindrome

, and false otherwise.

Example 1:

Input: x = 121

Output: true

Explanation: 121 reads as 121 from left to right and from right to left.

Example 2:

Input: x = -121

Output: false

Explanation: From left to right, it reads -121. From right to left, it becomes 121-. Therefore it is not a palindrome.

Example 3:

Input: x = 10

Output: false

Explanation: Reads 01 from right to left. Therefore it is not a palindrome.

https://leetcode.com/problems/palindrome-number.

Solution:

```
class Solution {
    public boolean isPalindrome(int x) {
        if (x < 0) {
            return false;
        }
        int temp = x, rev = 0;
        while (x > 0) {
```

```
            int rem = x % 10;
            rev = rev * 10 + rem;
            x = x / 10;
        }
        return temp == rev;
    }
}
```

You are given a string s consisting of lowercase English letters, and an integer k. Your task is to convert the string into an integer by a special process, and then transform it by summing its digits repeatedly k times. More specifically, perform the following steps:

1. Convert s into an integer by replacing each letter with its position in the alphabet (i.e. replace 'a' with 1, 'b' with 2, ..., 'z' with 26).

2. Transform the integer by replacing it with the sum of its digits.

3. Repeat the transform operation (step 2) k times in total.

For example, if s = "zbax" and k = 2, then the resulting integer would be 8 by the following operations:

1. Convert: "zbax" → "(26)(2)(1)(24)" → "262124" → 262124

2. Transform #1: 262124 → 2 + 6 + 2 + 1 + 2 + 4 → 17

3. Transform #2: 17 → 1 + 7 → 8

Return the resulting integer after performing the operations described above.

Example :

Input: s = "zbax", k = 2

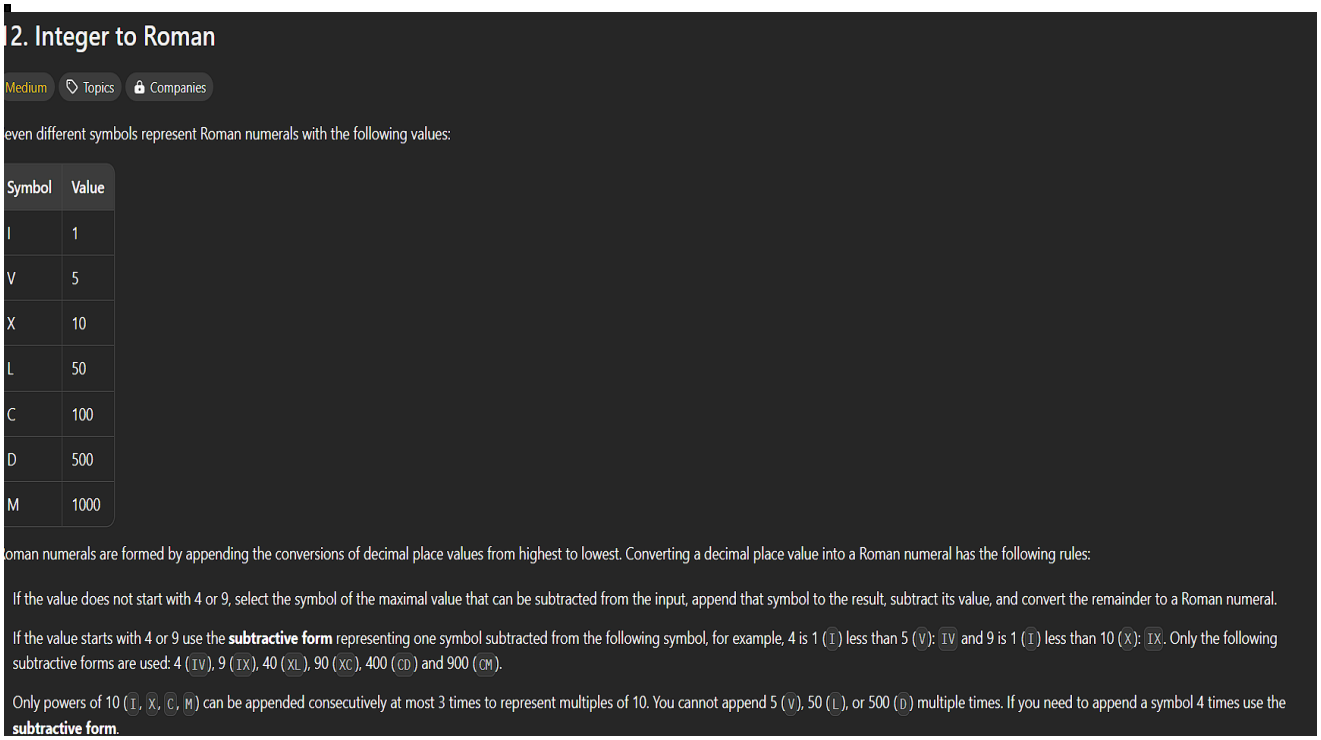
Output: 8

```
class Main {
    public static void main(String[] args) {
        String[] str = {"zbax"};
```

```
        int k = 2;



        int result = trString(str[0], k);
        System.out.println("The sumof (53=5+3) is: "+result);
    }
    public static int trString(String str, int k) {
        int n = 0;



        for (int i = 0; i < str.length(); i++) {
            n += (str.charAt(i) - 'a' + 1);
        }

        for (int i = 0; i < k; i++) {
            n = digitSum(n);
        }

        return n;
    }
public static int digitSum(int n) {
        int sum = 0;



        while (n > 0) {
            sum += n % 10;
             n /= 10;
        }
```

```
        return sum;
    }
}
```

4



12. Integer to Roman

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even different symbols represent Roman numerals with the following values:

Symbol	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

oman numerals are formed by appending the conversions of decimal place values from highest to lowest. Converting a decimal place value into a Roman numeral has the following rules:

If the value does not start with 4 or 9, select the symbol of the maximal value that can be subtracted from the input, append that symbol to the result, subtract its value, and convert the remainder to a Roman numeral.

If the value starts with 4 or 9 use the **subtractive form** representing one symbol subtracted from the following symbol, for example, 4 is 1 (`I`) less than 5 (`V`): `IV` and 9 is 1 (`I`) less than 10 (`X`): `IX`. Only the following subtractive forms are used: 4 (`IV`), 9 (`IX`), 40 (`XL`), 90 (`XC`), 400 (`CD`) and 900 (`CM`).

Only powers of 10 (`I`, `X`, `C`, `M`) can be appended consecutively at most 3 times to represent multiples of 10. You cannot append 5 (`V`), 50 (`L`), or 500 (`D`) multiple times. If you need to append a symbol 4 times use the **subtractive form**.

https://leetcode.com/problems/integer-to-roman

https://leetcode.com/problems/integer-to-roman

Solution:

```
public class Solution {
    public String intToRoman(int num) {
        int[] val = {1000, 900, 500, 400, 100, 90, 50, 40, 10, 9, 5, 4, 1};
```

```
    String[] symbols = {"M", "CM", "D", "CD", "C", "XC", "L", "XL", "X", "IX", "V", "IV",
"I"};
    StringBuilder roman = new StringBuilder();
    for (int i = 0; i < val.length; i++) {

      while (num >= val[i]) {
        roman.append(symbols[i]);
        num -= val[i];
      }
    }
    return roman.toString();
  }
}
```

Note: had referred gpt in order to take help to append the string without creating the new function for it .