1. Write a program to find factorial by recursion also resolve the edge case how you will find correct factorial number after 12 ie. Factorial of 13,14 .(hint a keyword)?
2. Write a program to find a number is prime or not ?
3. Write a program to return which character having highest occurance in string(string is: ‘a’,’a’,’b’,’c’,’d’;?
4. Write a program to find greatest and smallest number in an array(10,23,78,15,0,19)?
5. Write a program to find a number and string is palindrome or not without using built in library?

6. 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].

7. A magician claims he can determine if a number is "balanced" or "unbalanced." To verify his claim, you are tasked to write a program that checks this property. A number is called balanced if it is divisible by 2 without leaving any remainder, and unbalanced otherwise.

Write an method to determine if a given number is balanced or unbalanced?

8. . Positive or Negative Number

Question:

A treasure detector categorizes a number as "forward" if it leads to a treasure and "backward" if it leads to danger. Write a program to determine if a given number is forward (positive) or backward (negative).

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 2.⁠ ⁠Sum of First N Natural Numbers

Question:

A staircase has "N" steps. To calculate the total effort required to climb it, you need to find the sum of all steps numbered from 1 to N. Write an algorithm to compute the total effort (i.e., the sum of the first N natural numbers).

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 3.⁠ ⁠Greatest of Two Numbers

Question:

Two warriors are competing in a duel. Each warrior's strength is represented by a number. Write a program to determine which warrior has greater strength, or if the duel ends in a tie.

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 4.⁠ ⁠Greatest of Three Numbers

Question:

A magical stone can glow in one of three colors based on three numbers: red, blue, or green. The stone glows the brightest for the highest number. Write a program to determine which color shines the brightest or if there is a tie.

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 5.⁠ ⁠Leap Year or Not

Question:

A time traveler can only travel back in time during a "special year." A year is considered special if it meets certain conditions (leap year rules). Write a program to check if a given year is special or not.

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 6.⁠ ⁠Sum of Digits of a Number

Question:

A mystic lock opens only when the sum of the digits of the input key matches a specific value. Write a program to calculate the sum of the digits of the given number (key) to unlock the mystic lock.

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 7.⁠ ⁠Reverse of a Number

Question:

A mirror reflects numbers in reverse order. Write a program to simulate the behavior of the mirror by reversing the digits of a given number.

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 8.⁠ ⁠Armstrong Number

Question:

A magic cube glows if you input a number such that the sum of the cubes of its digits equals the number itself. Write a program to determine if the given number makes the magic cube glow (Armstrong number).

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 9.⁠ ⁠Fibonacci Series

Question:

A mystical pattern grows according to the Fibonacci sequence, where each number is the sum of the two preceding ones. Write a program to generate the first N numbers of this pattern to study its growth.

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10.⁠ ⁠Power of a Number

Question:

A wizard casts a spell with two components: the base number and its power. Write a program to calculate the spell's effect by raising the base to the given power.