1. **Number of Vowels**: Write a function that takes a string and returns the number of vowels in the string. For this challenge, consider 'a', 'e', 'i', 'o', and 'u' as vowels.

   Sample Input: **"Hello, World!"**

   Sample Output: **3**

2. **Pangram Checker**: Write a function that takes a string and checks whether it is a pangram or not. A pangram is a sentence that contains every letter of the alphabet at least once.

   Sample Input: **"The quick brown fox jumps over the lazy dog"**

   Sample Output: **True**

3. **Fibonacci Sequence**: Write a function that generates the Fibonacci sequence up to a given number n. The Fibonacci sequence is a series of numbers in which each number is the sum of the two preceding numbers.

   Sample Input: **8**

   Sample Output: **[0, 1, 1, 2, 3, 5, 8, 13]**

4. **Reverse a String**: Write a function that takes a string as input and returns the reversed string.

   Sample Input: **"hello"**

   Sample Output: **"olleh"**

5. **Factorial**: Write a function that calculates the factorial of a given number n. The factorial of a number is the product of all positive integers less than or equal to n.

   Sample Input: **5**

   Sample Output: **120**

6. **Palindrome Checker**: Write a function that takes a string as input and checks whether it is a palindrome or not. A palindrome is a word, phrase, number, or other sequence of characters that reads the same forward and backward.

   Sample Input: **"racecar"**
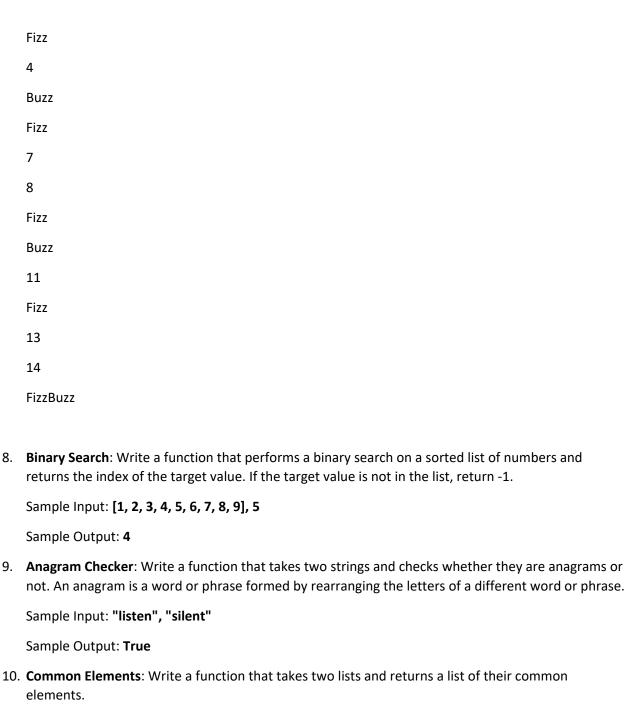
   Sample Output: **True**

7. **FizzBuzz**: Write a function that prints the numbers from 1 to n. For multiples of three, print "Fizz" instead of the number, and for multiples of five, print "Buzz". For numbers that are multiples of both three and five, print "FizzBuzz".

   Sample Input: **15**

   Sample Output:

   1

   2

Fizz

4

Buzz

Fizz

7

8

Fizz

Buzz

11

Fizz

13

14

FizzBuzz

8. **Binary Search**: Write a function that performs a binary search on a sorted list of numbers and returns the index of the target value. If the target value is not in the list, return -1.

   Sample Input: **[1, 2, 3, 4, 5, 6, 7, 8, 9], 5**

   Sample Output: **4**

9. **Anagram Checker**: Write a function that takes two strings and checks whether they are anagrams or not. An anagram is a word or phrase formed by rearranging the letters of a different word or phrase.

   Sample Input: **"listen", "silent"**

   Sample Output: **True**

10. **Common Elements**: Write a function that takes two lists and returns a list of their common elements.

    Sample Input: **[1, 2, 3, 4], [3, 4, 5, 6]**

    Sample Output: **[3, 4]**

11. **Sum of Digits**: Write a function that takes an integer as input and returns the sum of its digits.

    Sample Input: **12345**

    Sample output: 15

12. **Prime Number Checker**: Write a function that takes a positive integer as input and checks whether it is a prime number or not. A prime number is a number greater than 1 that is divisible only by 1 and itself.

    Sample Input: **17**

    Sample Output: **True**

13. **Missing Number**: Write a function that takes an array of integers from 1 to n (with one number missing) and returns the missing number.

    Sample Input: **[1, 2, 3, 5, 6]**

    Sample Output: **4**

14. **Counting Elements**: Write a function that takes an array of integers and returns the count of elements that are greater than or equal to a given threshold value.

    Sample Input: **[10, 20, 30, 40, 50], 35**

    Sample Output: **3**

15. **Matrix Transpose**: Write a function that takes a matrix (a 2D list) as input and returns its transpose. The transpose of a matrix switches the row and column indices.

    Sample Input: **[[1, 2, 3], [4, 5, 6], [7, 8, 9]]**

    Sample Output: **[[1, 4, 7], [2, 5, 8], [3, 6, 9]]**

16. **Title Case Converter**: Write a function that takes a string as input and converts it to title case. In title case, the first letter of each word is capitalized, and the rest of the word is in lowercase.

    Sample Input: **"the quick brown fox"**

    Sample Output: **"The Quick Brown Fox"**

17. **Word Frequency Counter**: Write a function that takes a string as input and returns a dictionary containing the frequency of each word in the string.

    Sample Input: **"the quick brown fox jumps over the lazy dog"**

    Sample Output: **{"the": 2, "quick": 1, "brown": 1, "fox": 1, "jumps": 1, "over": 1, "lazy": 1, "dog": 1}**

18. **Array Rotation**: Write a function that takes an array of integers and rotates it to the right by a given number of positions.

    Sample Input: **[1, 2, 3, 4, 5], 2**

    Sample Output: **[4, 5, 1, 2, 3]**

19. **Binary to Decimal Converter**: Write a function that takes a binary number as input and converts it to its decimal representation.

Sample Input: **"10101"**

Sample Output: **21**

20. **Matrix Multiplication**: Write a function that takes two matrices (2D lists) as input and returns their matrix multiplication result. The number of columns in the first matrix should be equal to the number of rows in the second matrix.

    Sample Input: **[[1, 2], [3, 4]], [[5, 6], [7, 8]]**

    Sample Output: **[[19, 22], [43, 50]]**