

Problem 1: Reverse a String

Description:

Write a function that takes a string as input and returns the string reversed.

Input:

A single string `s`` ($1 \leq |s| \leq 1000$) containing only alphabetical characters.

Output:

A string which is the reverse of `s``.

Test Cases:

1. Input: `"hello"`
Output: `"olleh"`
2. Input: `"racecar"`
Output: `"racecar"`

Problem 2: Check for Palindrome

Description:

Write a function that checks if a given string is a palindrome (reads the same forward and backward).

Input:

A single string `s`` ($1 \leq |s| \leq 1000$) containing only alphanumeric characters.

Output:

Return `True`` if `s`` is a palindrome, otherwise return `False``.

Test Cases:

1. Input: `"A man, a plan, a canal, Panama"`
Output: `True``
2. Input: `"hello"`
Output: `False``
3. Input: `"Was it a car or a cat I saw?"`
Output: `True``

Problem 3: Find the Maximum Element in an Array

Description:

Write a function that finds the maximum element in an integer array.

Input:

An array of integers `arr` ($1 \leq |arr| \leq 1000$, $-10^9 \leq arr[i] \leq 10^9$).

Output:

An integer representing the maximum value in `arr`.

Test Cases:

1. Input: `[3, 1, 4, 1, 5, 9, 2]`

Output: `9`

2. Input: `[-1, -2, -3, -4]`

Output: `-1`

3. Input: `[10]`

Output: `10`

Problem 4: Count Vowels in a String

Description:

Write a function that counts the number of vowels in a given string.

Input:

A single string `s` ($1 \leq |s| \leq 1000$) containing only alphabetical characters.

Output:

An integer representing the number of vowels (a, e, i, o, u) in `s`.

Test Cases:

1. Input: `"hello"`

Output: `2`

2. Input: `"sky"`

Output: `0`

Problem 5: Merge Two Sorted Arrays

Description:

Write a function that merges two sorted integer arrays into one sorted array.

Input:

Two arrays `arr1` and `arr2` ($1 \leq |arr1|, |arr2| \leq 1000$, $-10^9 \leq arr[i] \leq 10^9$).

Output:

A single sorted array containing all elements from `arr1` and `arr2`.

Test Cases:

1. Input: `arr1 = [1, 3, 5], arr2 = [2, 4, 6]`

Output: `[1, 2, 3, 4, 5, 6]`

2. Input: `arr1 = [1, 2, 3], arr2 = [4, 5, 6]`

Output: `[1, 2, 3, 4, 5, 6]`

3. Input: `arr1 = [0, 0, 0], arr2 = [1, 1, 1]`

Output: `[0, 0, 0, 1, 1, 1]`