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Coding Problems

Problem

Editorial

Submissions

Mario & Pauline

Accuracy: 33.26% Submissions: 887+ Points: 20

Mario wants to meet Pauline . Mario is standing at source point (x1 , y1) and Pauline is standing at destination point (x2 , y2 ) .Determine if it is possible to reach the destination point (x2, y2) from source point (x1 , y1) .

**Note:** Mario has only two valid moves :

(x1 , y1 ) to ( x1 + y1 , y1 )

(x1 , y1) to ( x1 , y1 + x1)

**Example1:**

**Input:**

3 2 5 7

**Output:**

True

**Explanation:**

You can reach destination point by taking following moves.

(3,2) --> (5,2) --> (5,7).

**Example2:**

**Input:**

1 2 3 4

**Output:**

False

**Explanation:**

There are no valid moves by which you can reach the destination point from source point.

**Your Task:**

Since it is a functional problem, you just have to complete the function **isPossible()** which accepts four integer values denoting coordinates of source and destination point and returns a boolean value.

**Constraints:**

C++ (g++ 5.4)+

1 // } Driver Code Ends

23

24

25 //User function Template for C++

26

27 bool isPossible(int sx, int sy, int dx, int dy)

28 {

29 //code here.

30 }

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Submissions

N bits

Accuracy: 67.87%

Submissions: 352+

Points: 30

Given a positive integer number **N**. The task is to generate all the binary strings of N bits. These binary strings should be in ascending order. **Note the space between two characters of the string.**

**Example1:**

Input:

1

Output:

0

1

**Example2:**

Input:

2

Output:

0 0

0 1

1 0

1 1

**User Task:**

The task is to complete the function **generateAllBinaryStrings()** which accepts given integer N and prints all the binary strings of N bits in the format shown in the examples.

**Constraints:**

1 <= T <= 10

1 <= N <= 15

Try more examples

C++ (g++ 5.4)

1 // } Driver Code Ends

20

21

22 //User function Template for C++

23

24 void generateAllBinaryStrings(int n)

25 {

26 // code here

27 }

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Contest Home

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Editorial

Submissions

### Quick Sort

Accuracy: 59.39%   Submissions: 431+   Points: 40

Quick Sort is a Divide and Conquer algorithm. It picks an element as pivot and partitions the given array around the picked pivot.

Given an array `arr[]`, its starting position `low` and its ending position `high`.

Implement the `partition()` and `quickSort()` functions to sort the array.

**Example 1:**

**Input:**

N = 5

`arr[]` = { 4, 1, 3, 9, 7}

**Output:**

1 3 4 7 9

**Example 2:**

**Input:**

N = 9

`arr[]` = { 2, 1, 6, 10, 4, 1, 3, 9, 7}

**Output:**

1 1 2 3 4 6 7 9 10

**Your Task:**

You don't need to read input or print anything. Your task is to complete the functions **`partition()`** and **`quickSort()`** which takes the array `arr[]`, `low` and `high` as input parameters and partitions the array. Consider the last element as the pivot such that all the elements less than(or equal to) the pivot lie before it and the elements greater than it lie after the pivot.

**Constraints:**

C++ (g++ 5.4)

```
1 // } Driver Code Ends
16 class Solution
17 {
18     public:
19         //Function to sort an array using quick sort algorithm.
20         void quickSort(int arr[], int low, int high)
21         {
22             // code here
23         }
24
25     public:
26         int partition (int arr[], int low, int high)
27         {
28             // Your code here
29         }
30 };
31
32 // } Driver Code Ends
```

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Contest Home

Coding Problems

Problem

Editorial

Submissions

### Searching an element in a sorted array (Ternary Search)

Accuracy: 55.58%   Submissions: 543+   Points: 50

Given a sorted array `arr[]` of size `N` and an integer `K`. The task is to check if `K` is present in the array or not using ternary search.

**Ternary Search**- It is a divide and conquer algorithm that can be used to find an element in an array. In this algorithm, we divide the given array into three parts and determine which has the key (searched element).

**Example 1:**

**Input:**

`N = 5, K = 6`  
`arr[] = {1,2,3,4,6}`

**Output:** 1

**Explanation:** Since, 6 is present in the array at index 4 (0-based indexing), output is 1.

**Example 2:**

**Input:**

`N = 5, K = 2`  
`arr[] = {1,3,4,5,6}`

**Output:** -1

**Explanation:** Since, 2 is not present in the array, output is -1.

**Your Task:**

You don't need to read input or print anything. Complete the function `ternarySearch()` which takes the sorted array `arr[]`, its size `N` and the element `K` as input parameters and returns `1` if `K` is present in the array, else it returns `-1`.

**Expected Time Complexity:**  $O(\log_3 N)$

C++ (g++ 5.4)+

```
1 // } Driver Code Ends
2
3
4
5
6
7 class Solution{
8     public:
9         // Function to find element in sorted array
10        // arr: input array
11        // N: size of array
12        // K: element to be searched
13        int ternarySearch(int arr[], int N, int K)
14        {
15            // Your code here
16        }
17 };
18 // } Driver Code Ends
```

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Contest Home

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Problem

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### Geek's Equation

Accuracy: 6.47%   Submissions: 676+   Points: 60

Geek wants you to evaluate  $(1 + A + A^2 + A^3 + \dots + A^K) \pmod{10^9+7}$ , where A, K are given.

**Example 1:**

**Input:**

A = 2, K = 2

**Output:**

7

**Explanation:**

$(1 + A + A^2 + \dots + A^K)$   
 $\Rightarrow (1 + 2 + 2^2)$   
 $\Rightarrow (1 + 2 + 4)$   
 $\Rightarrow 7 \pmod{10^9+7} \Rightarrow 7.$

**Example 2:**

**Input:**

A = 347148, K = 41171001

**Output:**

859147462

**Your Task:**

You don't need to read input or print anything. Your task is to complete the function **evaluateA()** which takes the array **A** and **K** as input parameters and returns the answer.

**Constraints:**

$1 \leq A, K \leq 10^9$

C++ (g++ 5.4)

```
1 // } Driver Code Ends
8 //User function Template for C++
9
10 class Solution{
11 public:
12     long long evaluateA(long long A, long long K)
13     {
14         // code here
15     }
16 };
17 // } Driver Code Ends
```

Custom Input

Compile & Run

Submit