



Experiment-2.2

Name : Jatin

UID: 20BCS5951

Branch : CSE

Section/Group : NTTP_DM605/B

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Subject : CC Lab

Subject Code : 20CSP-351

AIM: To demonstrate the concept of Graph

Problem1: Find the difference

You are given two strings s and t. String t is generated by random shuffling string s and then add one more letter at a random position. Return the letter that was added to t.

Example 1:

Input: s = "abcd", t = "abcde"

Output: "e"

Explanation: 'e' is the letter that was added.

Example 2:

Input: s = "", t = "y"

Output: "y"

CODE:-

```
class Solution {
public char findTheDifference(String s, String t) { int
s1=0,s2=0;
for(int i=0;i<s.length();i++)
{
s1+=s.charAt(i);
}
for(int i=0;i<t.length();i++)
{ s2+=t.charAt(i);
}
return (char) (s2-s1);
}
}
```

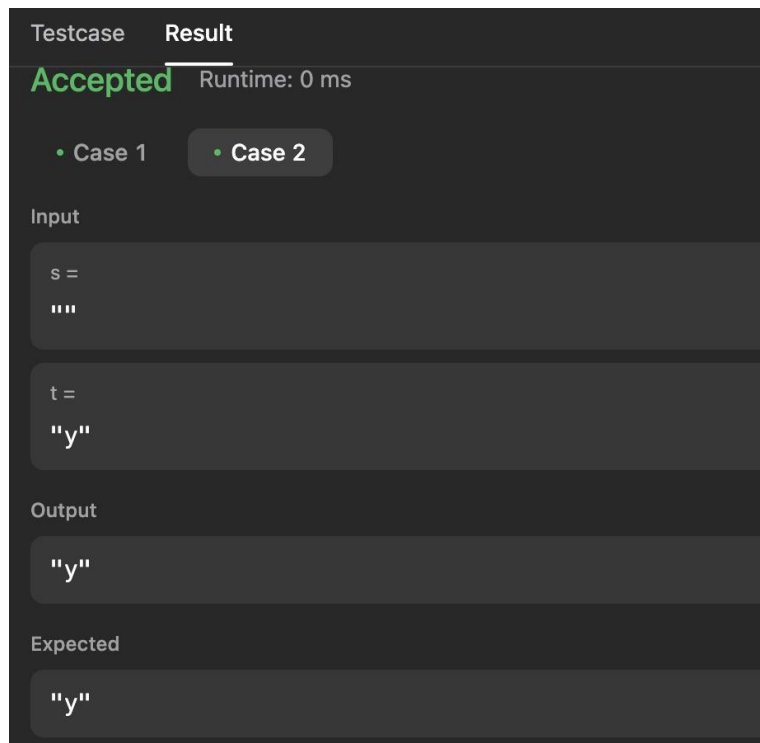


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Output :

Testcase	Result
	Accepted Runtime: 0 ms
<ul style="list-style-type: none">• Case 1• Case 2	
Input	
s = "abcd"	
t = "abcde"	
Output	
"e"	
Expected	
"e"	



Problem 2: Predict the winner

You are given an integer array `nums`. Two players are playing a game with this array: player 1 and player 2.

Player 1 and player 2 take turns, with player 1 starting first. Both players start the game with a score of 0. At each turn, the player takes one of the numbers from either end of the array (i.e., `nums[0]` or `nums[nums.length - 1]`) which reduces the size of the array by 1. The player adds the chosen number to their score. The game ends when there are no more elements in the array.

Return true if Player 1 can win the game. If the scores of both players are equal, then player 1 is still the winner, and you should also return true. You may assume that both players are playing optimally.

Example 1:

Input: `nums = [1,5,2]`

Output: false

Explanation: Initially, player 1 can choose between 1 and 2.

If he chooses 2 (or 1), then player 2 can choose from 1 (or 2) and 5. If player 2 chooses 5, then player 1 will be left with 1 (or 2).



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So, final score of player 1 is $1 + 2 = 3$, and player 2 is 5.

Hence, player 1 will never be the winner and you need to return false. **Example 2:**

Input: nums = [1,5,233,7]

Output: true

Explanation: Player 1 first chooses 1. Then player 2 has to choose between 5 and 7. No matter which number player 2 choose, player 1 can choose 233.

Finally, player 1 has more score (234) than player 2 (12), so you need to return True representing player1 can win.

CODE:-

```
class Solution { public boolean
PredictTheWinner(int[] nums) { return
fun(nums,0,nums.length-1,0,0,1); }
boolean fun(int[] arr,int start,int end,int sum1,int sum2,int turn){
if(start>end){ if(sum1 >= sum2) return true;
else return false;
}
if(turn == 1) /*turn of Player1*/ return
fun(arr,start+1,end,sum1+arr[start],sum2,1-turn) ||
fun(arr,start,end-1,sum1+arr[end],sum2,1-turn);
else /*turn of player2*/
return fun(arr,start+1,end,sum1,sum2+arr[start],1-turn) && fun(arr,start,end-
1,sum1,sum2+arr[end],1-turn);
}
}
```

Output :



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Testcase **Result**

Accepted Runtime: 0 ms

• Case 1 • Case 2

Input

```
nums =  
[1,5,2]
```

Output

```
false
```

Expected

```
false
```



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Testcase

Result

Accepted Runtime: 0 ms

• Case 1

• Case 2

Input

```
nums =  
[1,5,233,7]
```

Output

```
true
```

Expected

```
true
```