



Experiment-2.2

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Branch: BE-CSE

Section/Group: 905/A

Semester: 6th

Date of Performance: 05/04/2023

Subject Name: Competitive Coding-II

Subject Code: 20CSP-351

1. Aim:

To implement the concept of Graph.

2. Objective:

- The objective is to build problem solving capability and to learn the basic concepts of Graph in data structures.
- The implementation of Graphs problem on LeetCode.
- To acquire proficiency in developing and implementing efficient solutions of given problems by using different approaches and achieve desirable results

3. LeetCode code and output:

• Is Graph Bipartite

CODE:-

```
class Solution {
public:
    bool coloring(vector<vector<int>>& graph, int i, vector<int>& color, int to_color){
        if (color[i]== to_color)return true;
        if (color[i] == 1-to_color)return false;
        color[i]= to_color;
        for (int it=0; it<graph[i].size(); it++){
            if (coloring(graph,graph[i][it],color,1-to_color)==false)return false;
        }
        return true;
    }
    bool isBipartite(vector<vector<int>>& graph) {
        int v= graph.size();
```



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```
vector<int> color(v,-1);
for (int i=0; i<v; i++){
    if (color[i]==-1){
        if(coloring(graph,i,color,0)==false)return false;
    }
}
return true;
};
```

OUTPUT :-

LeetCode

< Problem List >

Premium

Description Editorial Solutions (2.8k) Submissions

Accepted

Next question

786. K-th Smallest Prime Fraction

More challenges

2493. Divide Nodes Into the Maximum Number of Groups

All statuses All languages

Accepted
a few seconds ago

C++

redC0der
Apr 11, 2023 21:41

Details + Solution

C++

Runtime 31 ms Beats 24.6% Memory 13.5 MB Beats 64.5%

Click the distribution chart to view more details

Notes

Write your notes here

Related Tags

Select tags 0/5

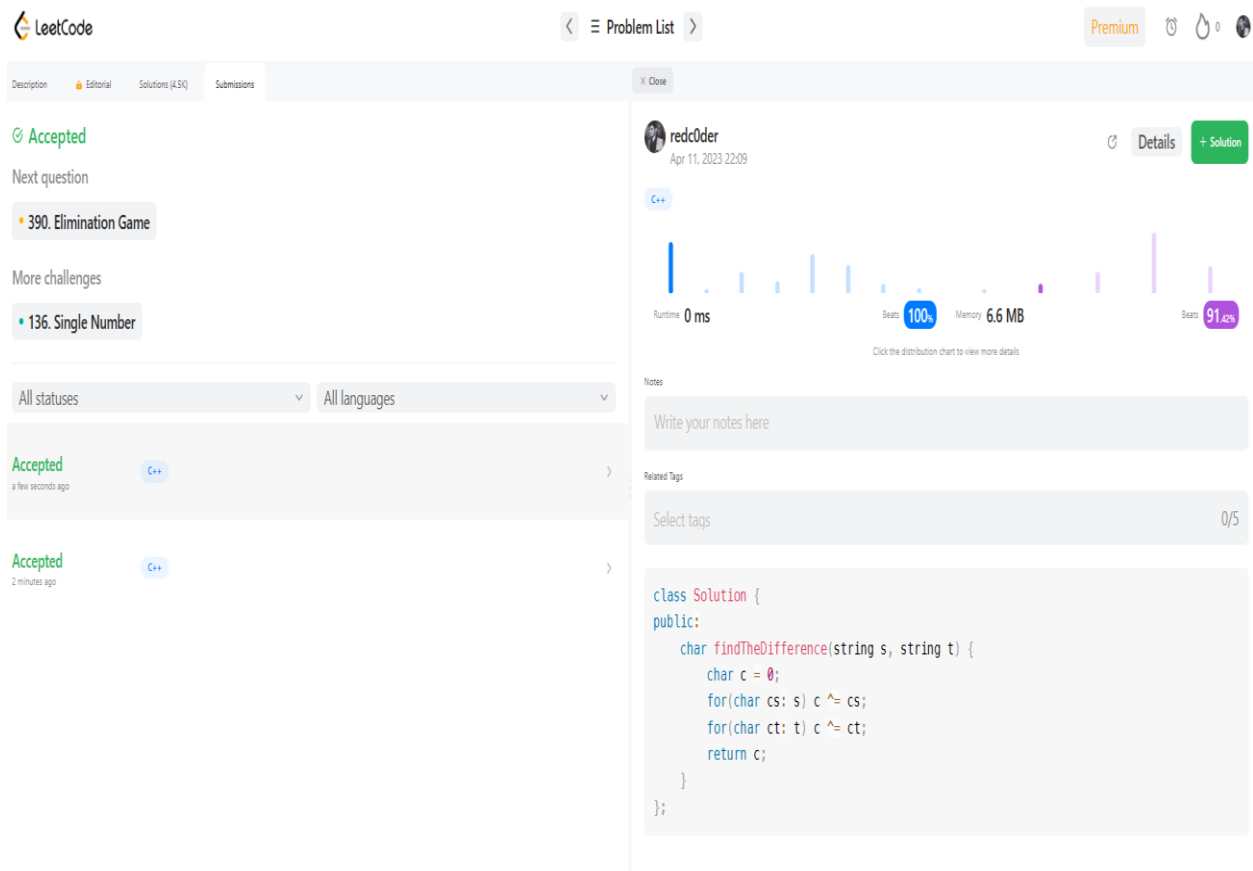
```
class Solution {
public:
    bool coloring(vector<vector<int>>& graph, int i, vector<int>& color, int to_color) {
        if (color[i] == to_color) return true;
        if (color[i] == 1-to_color) return false;
        color[i] = to_color;
        for (int it=0; it<graph[i].size(); it++){
            if (coloring(graph, graph[i][it], color, 1-to_color) == false) return false;
        }
        return true;
    }
    bool isBipartite(vector<vector<int>>& graph) {
```

• Find the Difference

CODE:-

```
class Solution {  
public:  
    char findTheDifference(string s, string t) {  
        char c = 0;  
        for(char cs: s) c ^= cs;  
        for(char ct: t) c ^= ct;  
        return c;  
    }  
};
```

OUTPUT:-



The screenshot shows a LeetCode submission interface. On the left, there's a sidebar with navigation links: Description, Editorial, Solutions (450), and Submissions. The main area displays the problem status as 'Accepted' with a green checkmark. Below this, there are links for 'Next question' (390. Elimination Game) and 'More challenges' (136. Single Number). A dropdown menu shows 'All statuses' and 'All languages'. The submission details for a C++ solution are shown, including the code snippet:

```
class Solution {  
public:  
    char findTheDifference(string s, string t) {  
        char c = 0;  
        for(char cs: s) c ^= cs;  
        for(char ct: t) c ^= ct;  
        return c;  
    }  
};
```

 On the right, there's a performance chart showing Runtime (0 ms) and Memory (6.6 MB), both achieving 100% beats. The user 'redc0der' is credited with the solution, dated Apr 11, 2023, 22:09. There are also links for 'Details' and '+ Solution'.