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CSE (DS) DIV: A

DJS COMPUTE - Competitive Programming

Problem 1:

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
    int a, b;
    cin >> a >> b;

    if (a % b == 0)
        cout << 0 << "\n";
    else
        cout << b - (a % b) << "\n";

    return 0;
}
```

Output:

The screenshot displays the CPH JUDGE IDE interface. On the left, the 'Local: A' sidebar shows three test cases, all of which have passed. The first test case passed in 45ms with input '10 4' and expected output '2'. The second test case passed in 1ms with input '100 13' and expected output '4'. The third test case passed in 1ms with input '15 13' and expected output '11'. Below the test cases are buttons for '+ New Testcase', 'Set ONLINE_JUDGE', 'Run All', '+ New', 'Stop', 'Help', and 'Delete'.

The main editor area shows the C++ source code for 'A.cpp' with the following content:

```
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 int main()
5 {
6     int a, b;
7     cin >> a >> b;
8
9     if (a % b == 0)
10         cout << 0 << "\n";
11     else
12         cout << b - (a % b) << "\n";
13
14     return 0;
15 }
```

At the bottom, the 'TERMINAL' tab is active, showing the command prompt 'jay@Jays-MacBook-Air Jay1105 %'. The status bar at the very bottom indicates 'Ln 14, Col 13', 'Spaces: 4', 'UTF-8', 'LF', 'C++', and 'Mac'.

Problem 2:

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
    string a, b;
    cin >> a >> b;

    map<char, int> mp;

    char ans;

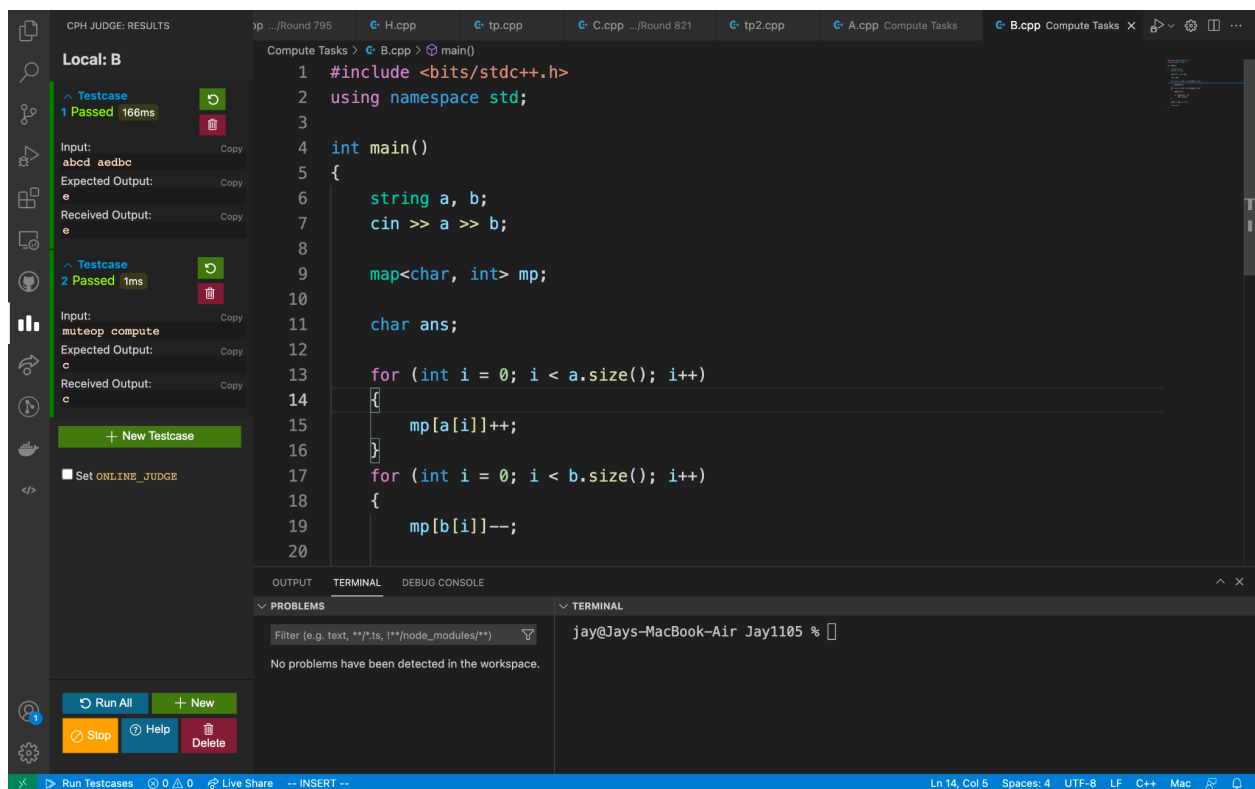
    for (int i = 0; i < a.size(); i++)
    {
        mp[a[i]]++;
    }
    for (int i = 0; i < b.size(); i++)
    {
        mp[b[i]]--;

        if (mp[b[i]] < 0)
            ans = b[i];
    }

    cout << ans << "\n";
```

```
    return 0;
}
```

Output:



The screenshot shows a C++ IDE with a code editor, a left sidebar, and a bottom panel. The code editor displays the following C++ code:

```
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 int main()
5 {
6     string a, b;
7     cin >> a >> b;
8
9     map<char, int> mp;
10
11     char ans;
12
13     for (int i = 0; i < a.size(); i++)
14     {
15         mp[a[i]]++;
16     }
17     for (int i = 0; i < b.size(); i++)
18     {
19         mp[b[i]]--;
20     }
```

The left sidebar shows the 'Local: B' section with two testcases. The first testcase is '1 Passed 166ms' and the second is '2 Passed 1ms'. The bottom panel shows the 'TERMINAL' tab with the command 'jay@Jays-MacBook-Air Jay1105 %' and the output 'No problems have been detected in the workspace.'

Problem 3:

Code:

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
    int n;
    cin >> n;

    vector<int> a(n);
    for (int i = 0; i < n; i++)
    {
        cin >> a[i];
    }

    if (n == 1)
        cout << -1 << "\n";
    else
    {
        vector<int> b(n);
        for (int i = 0; i < n; i++)
        {
            if (i == n - 1)
            {
                b[i] = i + 1;
            }
        }
    }
}
```

```

    }
    else if (a[i] != i + 1)
    {
        b[i] = i + 1;
    }
    else
    {
        int temp = i + 2;
        b[i] = temp;
        temp -= 1;
        i++;
        b[i] = temp;
    }
}

```

```

if (b[n - 1] == a[n - 1])
{
    int temp = b[n - 1];
    b[n - 1] = b[n - 2];
    b[n - 2] = temp;
}

```

```

for (int i = 0; i < n; i++)
{
    cout << b[i] << " ";
}
cout << "\n";
}

```

```

return 0;
}

```

Output:

The screenshot displays a C++ IDE interface with a dark theme. On the left, a sidebar titled 'Local: C' shows the results of five test cases, all of which passed. The first test case is expanded, showing an input of '3' and '1 2 3', an expected output of '2 3 1', and a received output of '2 3 1'. Below the test results, there are buttons for 'Run All', '+ New', 'Stop', 'Help', and 'Delete'. The main editor area shows a C++ program with the following code:

```
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 int main()
5 {
6     int n;
7     cin >> n;
8
9     vector<int> a(n);
10    for (int i = 0; i < n; i++)
11    {
12        cin >> a[i];
13    }
14
15    if (n == 1)
16        cout << -1 << "\n";
17    else
18    {
19        vector<int> b(n);
20        for (int i = 0; i < n; i++)
```

At the bottom, there is a 'PROBLEMS' panel showing 'No problems have been detected in the workspace.' and a 'TERMINAL' panel showing the prompt 'jay@Jays-MacBook-Air Jay1105 %'.