



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment 10

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Branch: CSE

Semester: 6

Subject Name: AP Lab

UID:22bcs11958

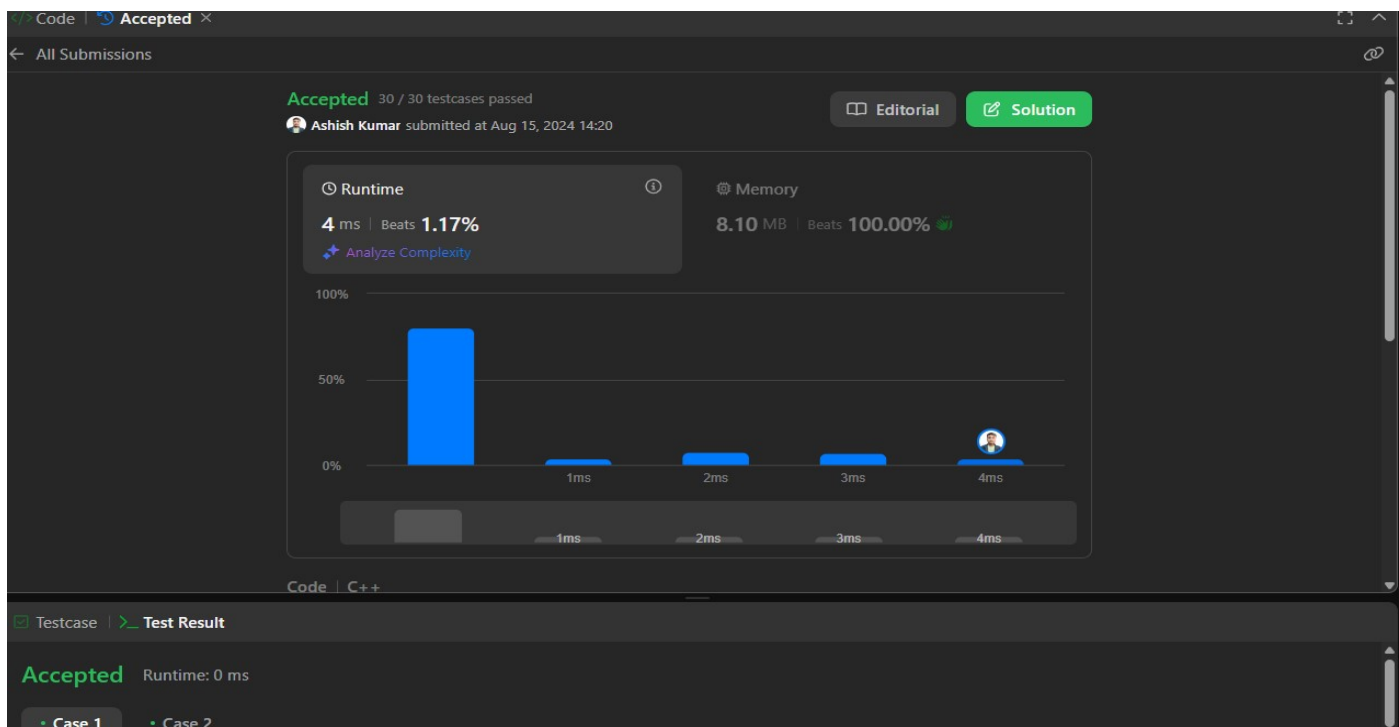
Section/Group:614(B)

Date of Performance:17/04/25

Subject Code: 22CSP-351

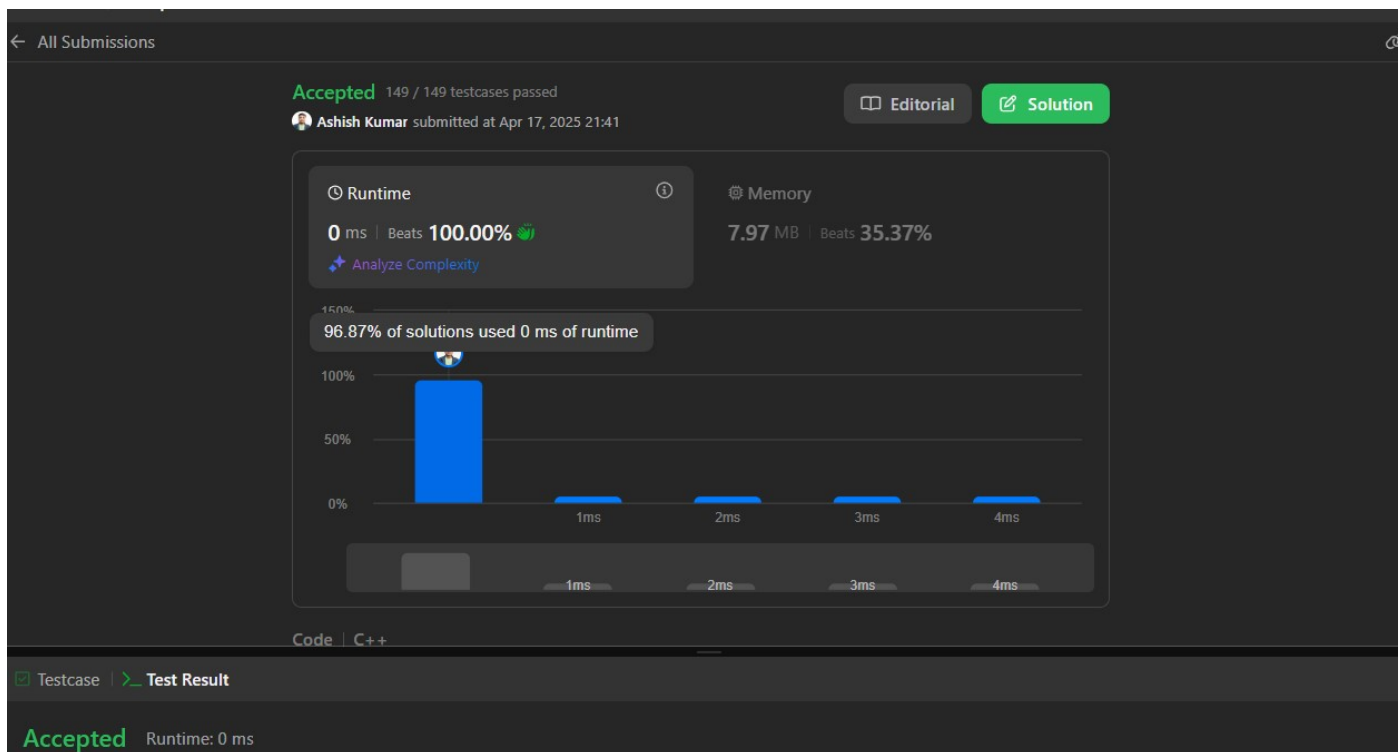
Q1:-Pascal's Triangle

```
class Solution {
public:
    vector<vector<int>> generate(int numRows) {
        vector<vector<int>> result;
        for(int i=0;i<numRows;i++)
        {
            vector<int> v(i+1,1);
            for(int j=1;j<i;j++)
            {
                v[j]=result[i-1][j]+result[i-1][j-1];
            }
            result.push_back(v);
        }
        return result;
    }
};
```



Q2:-Hamming Distance

```
class Solution {
public:
    int hammingDistance(int x, int y) {
        int count=0;
        int n=x^y;
        for(int i=0;i<32;i++)
        {
            if(((n>>i)& 1)==1) count++;
        }
        return count;
    }
};
```



Q3:-Task Scheduler

```
class Solution {
public:
    int leastInterval(vector<char>& tasks, int n) {
        if (n == 0) {
            return tasks.size();
        }

        vector<int> freq(26, 0); // Use int instead of char for the frequency array
```



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```
for (char& ch : tasks) {
    freq[ch - 'A']++;
}

sort(freq.begin(), freq.end());
int maxFreq = freq[25];
int groupCount = maxFreq - 1;
int idleSlots = n * groupCount;

for (int i = 24; i >= 0; i--) {
    idleSlots -= min(freq[i], groupCount);
}

if (idleSlots > 0) {
    return tasks.size() + idleSlots;
}
return tasks.size();
}
};
```

<> Code | Accepted ×

← All Submissions

Accepted 72 / 72 testcases passed

Ashish Kumar submitted at Dec 20, 2024 10:56

Editorial Solution

Runtime

4 ms | Beats 71.86%

Analyze Complexity

Memory

38.18 MB | Beats 95.17%

Code | C++

Testcase | Test Result

Accepted Runtime: 0 ms

Q4:-Number of 1 Bits

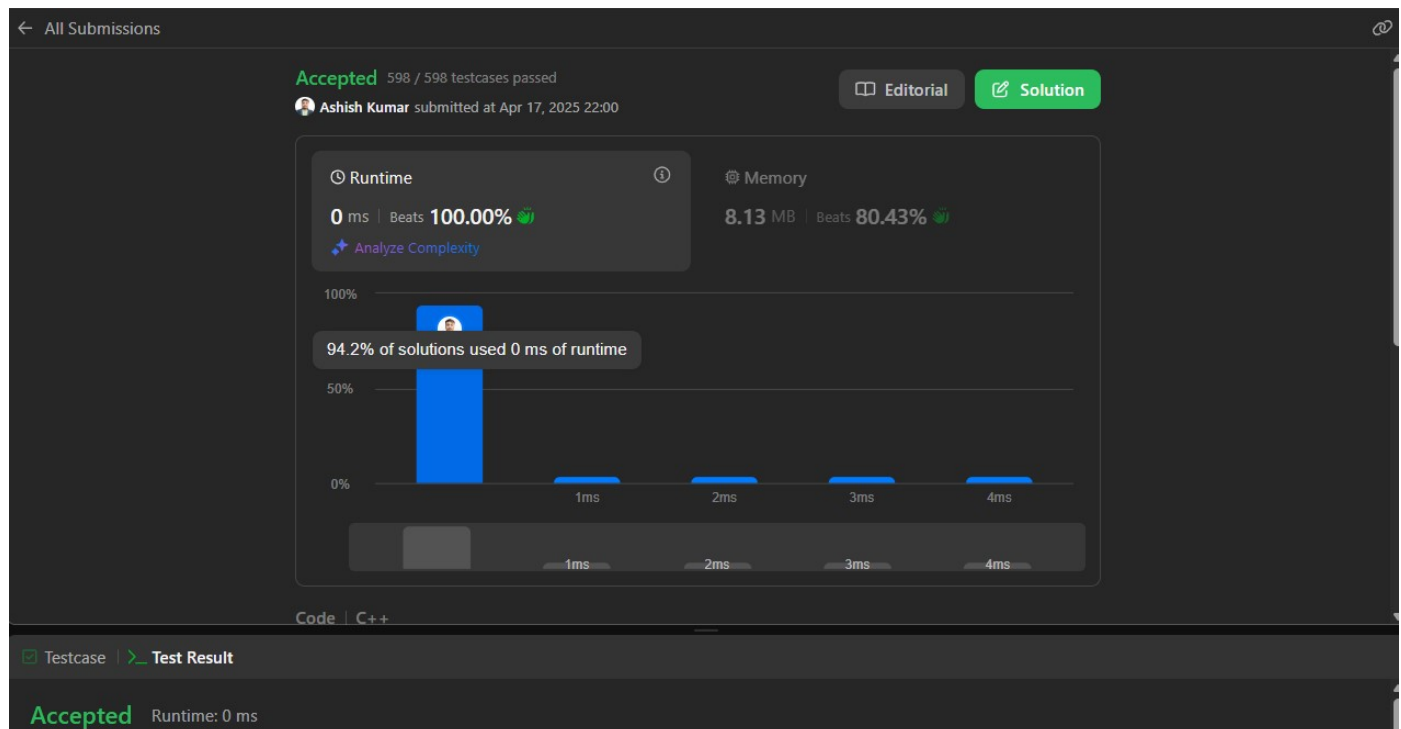
```
class Solution {
public:
    int hammingWeight(int n) {
```



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```
int count=0;
for(int i=0;i<32;i++)
{
    if(((n>>i)&1)==1) count++;
}
return count;
}
};
```



Q5:-Valid Parenthesis

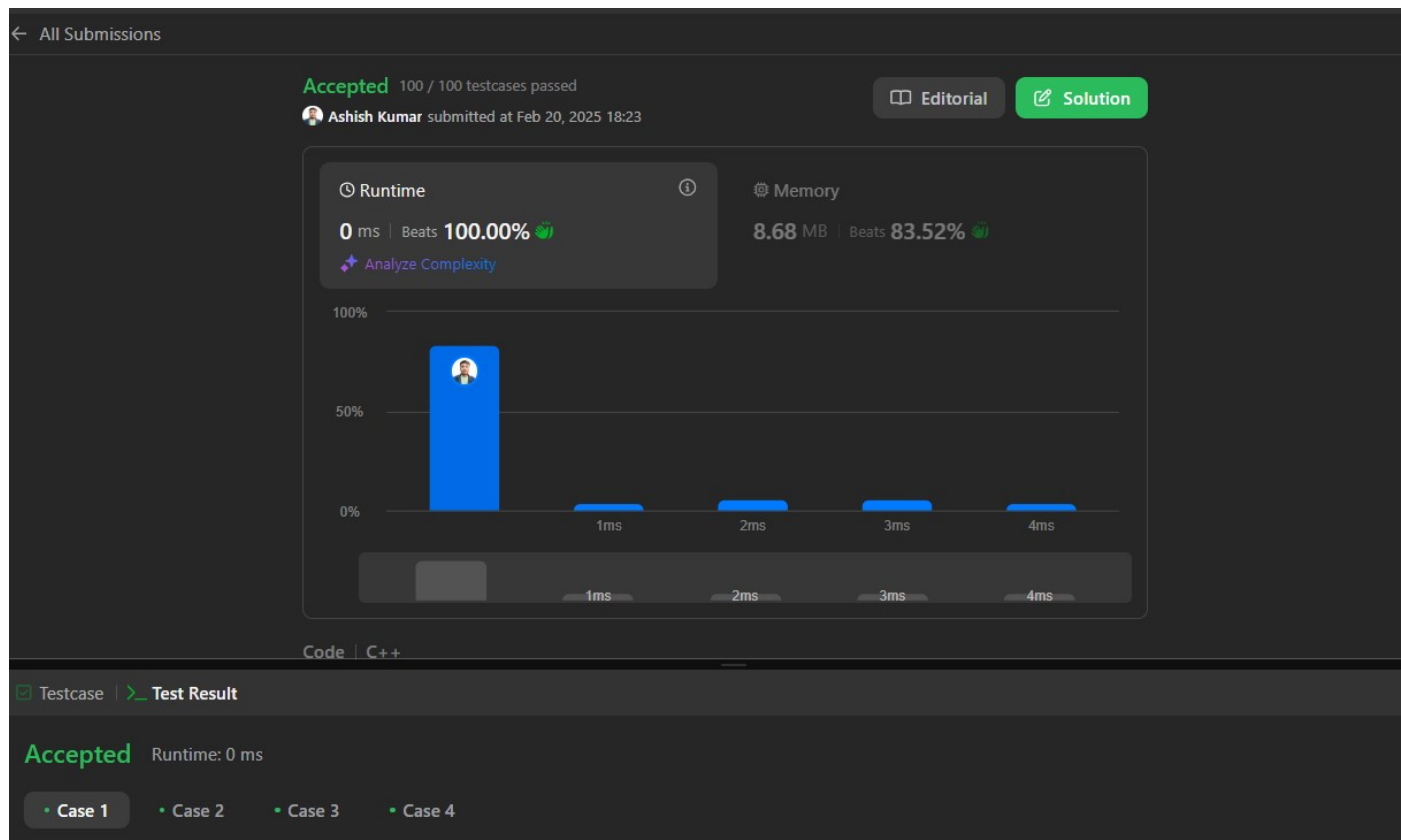
```
class Solution {
public:
    bool isValid(string s) {
        stack<char>st;
        for(auto ch:s)
        {
            if(ch=='[' || ch=='{' || ch=='(')
            {
                st.push(ch);
            }
            else
            {
                if(ch==')' && !st.empty() && st.top()=='(')
                {
                    st.pop();
                }
                else if(ch=='}' && !st.empty() && st.top()=='{')
                {
                    st.pop();
                }
            }
        }
        return st.empty();
    }
};
```



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```
{
    st.pop();
}
else if(ch==']' && !st.empty() && st.top()=='[')
{
    st.pop();
}
else
{
    return false;
}
}
return st.empty();
};
```



Q6:-Trapping Rain Water

```
class Solution {
public:
    int trap(vector<int>& height) {
        int n=height.size();
        int sum=0;
        vector<int>leftMaxheight(n),rightMaxheight(n);
```



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```
if(n<=2) return 0;
leftMaxheight[0]=height[0];
for(int i=1;i<n;i++)
{
    leftMaxheight[i]=max(leftMaxheight[i-1],height[i]);
}
rightMaxheight[n-1]=height[n-1];
for(int i=n-2;i>=0;i--)
{
    rightMaxheight[i]=max(rightMaxheight[i+1],height[i]);
}
for(int i=0;i<n;i++)
{
    sum+=max(0,min(leftMaxheight[i],rightMaxheight[i])-height[i]);
}
return sum;
}
};
```

</> Code | Accepted

All Submissions

Accepted 323 / 323 testcases passed

Ashish Kumar submitted at Nov 14, 2024 21:52

Editorial

Solution

Runtime

0 ms | Beats 100.00%

Analyze Complexity

Memory

25.98 MB | Beats 80.02%

Time Interval	Percentage
1ms	100%
2ms	0%
3ms	0%
4ms	0%
5ms	0%
6ms	0%
7ms	0%

Code | C++

Testcase

Test Result

Accepted Runtime: 0 ms