Assignment - 10

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Subject Name: AP LAB-II
Subject Code: 22CSP-351

1. **Aim:**
   a. **Hamming Distance**
   b. **No. of 1 Bits**
   c. **Divide Two Integers**

2. **Implementation/Code:**

A. Hamming Distance

```
class Solution {

public:

    int hammingDistance(int x, int y) {

       int xorResult = x ^ y;

       int bitDifference = 0;

       while (xorResult) {

          bitDifference += xorResult & 1;

          xorResult >>= 1;

       }
```

```
        return bitDifference;
    }
};
```

B. No. of 1 Bits

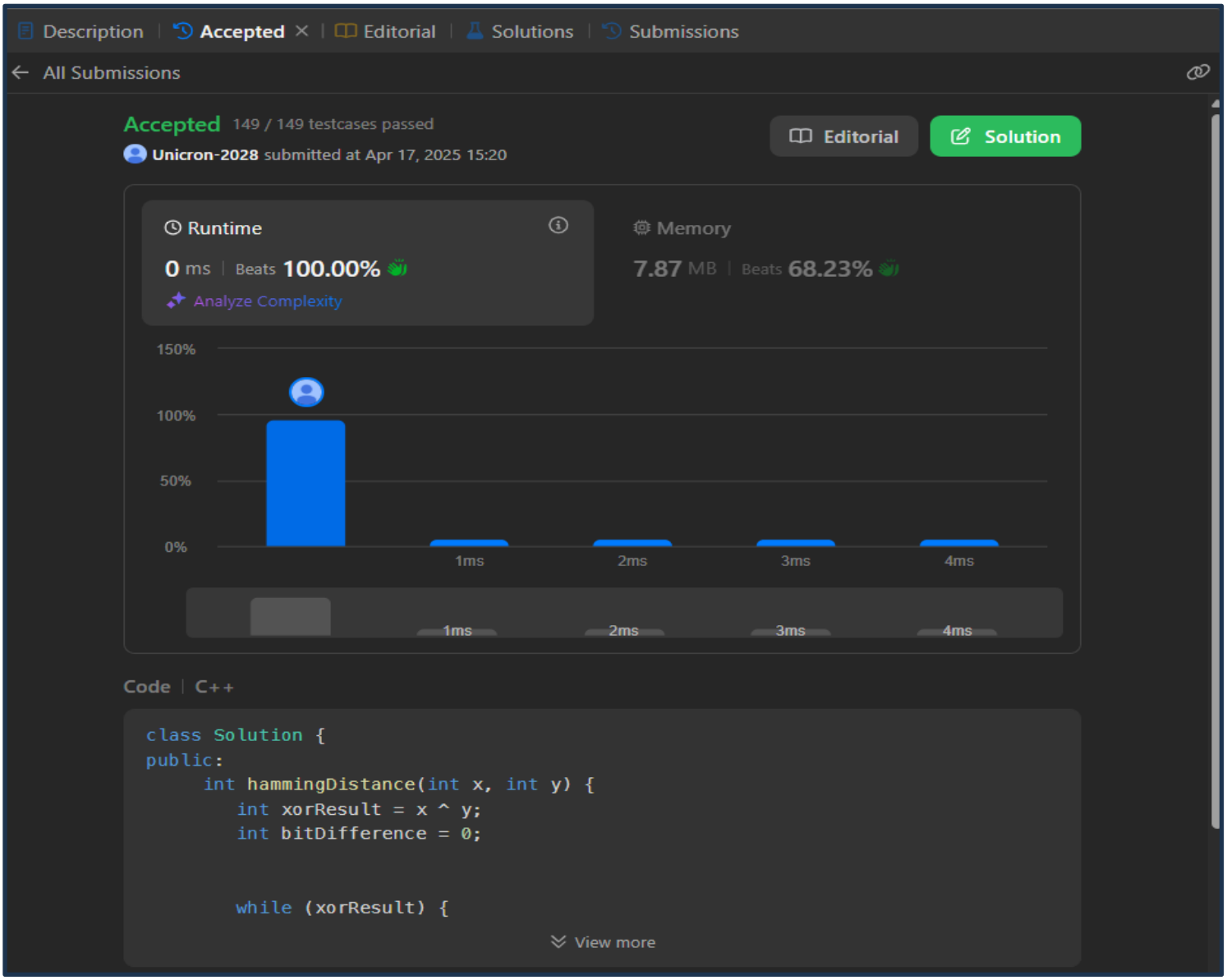
```
class Solution {
public:
    int hammingWeight(int n) {
        int count = 0;
        while (n != 0) {
            count += (n & 1);
            n >>= 1;
        }
        return count;
    }
};
```

C. Divide Two Integers

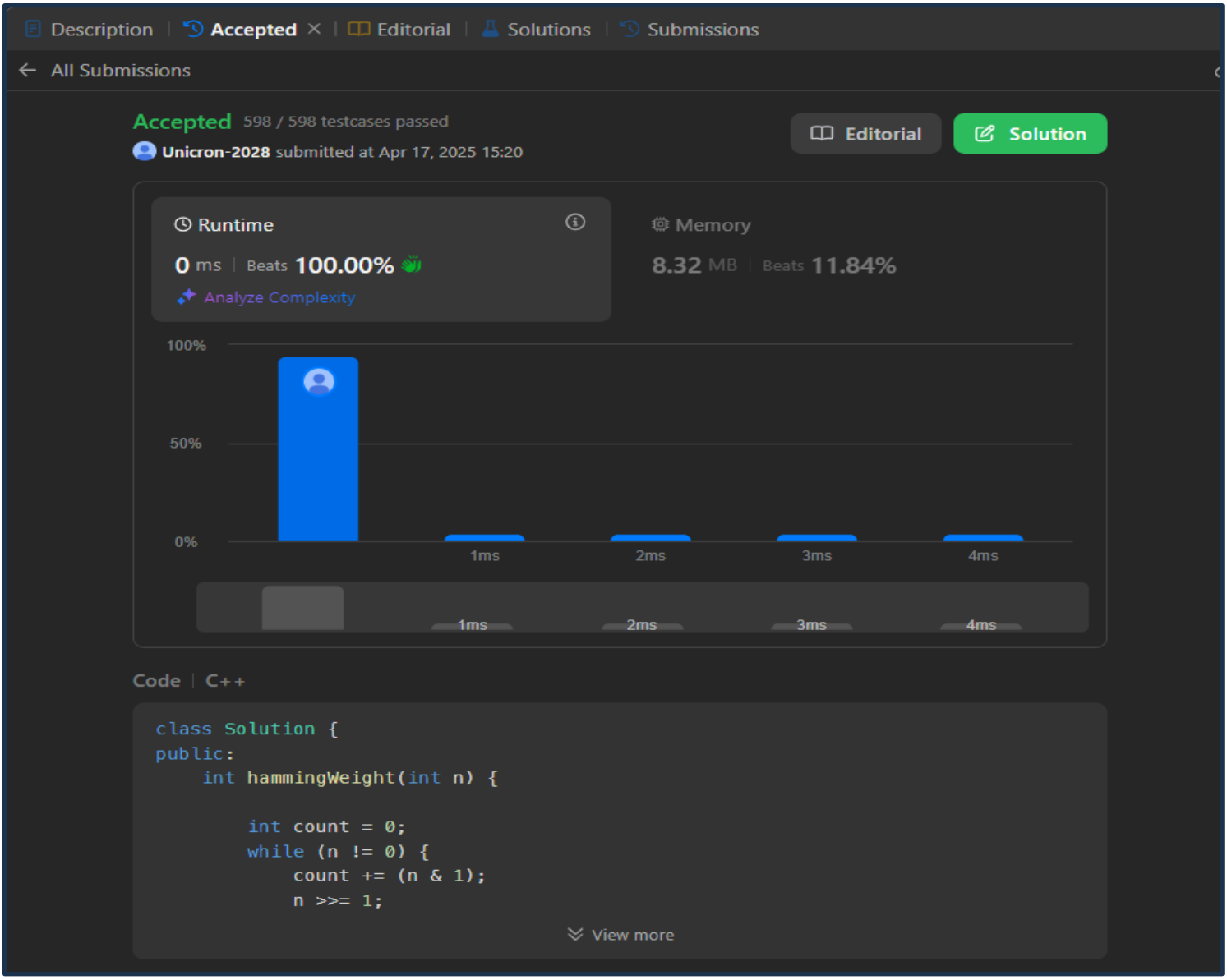
```
class Solution {
public:
    int divide(int dividend, int divisor) {

        if (dividend == INT_MIN && divisor == -1) {
            return INT_MAX;
        }

        long long absDividend = abs((long long)dividend);
        long long absDivisor = abs((long long)divisor);

        long long quotient = 0;

        while (absDividend >= absDivisor) {
            long long tempDivisor = absDivisor, multiple = 1;

            while (absDividend >= (tempDivisor << 1)) {
                tempDivisor <<= 1;
                multiple <<= 1;
            }

            absDividend -= tempDivisor;
            quotient += multiple;
        }

        if ((dividend < 0) ^ (divisor < 0)) {
            quotient = -quotient;
        }
        if (quotient > INT_MAX) return INT_MAX;
        if (quotient < INT_MIN) return INT_MIN;

        return quotient;
    }
};
```

3. Output

A. Hamming Distance



B. No. of 1 Bits


Description
Accepted
Editorial
Solutions
Submissions
All Submissions
Accepted 598 / 598 testcases passed
Unicron-2028 submitted at Apr 17, 2025 15:20
Editorial
Solution
Runtime
0 ms | Beats 100.00%
Analyze Complexity
Memory
8.32 MB | Beats 11.84%
100%
50%
0%
1ms
2ms
3ms
4ms
Code | C++
class Solution {
public:
int hammingWeight(int n) {
int count = 0;
while (n != 0) {
count += (n & 1);
n >>= 1;
View more

C. Divide Two Integers