



Experiment 2.3

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Section/Group: KRG_CC-1/B

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Subject Name: AP Lab 2

Subject Code: 21CSP-351

1. Aim: To demonstrate the concept of Divide and Conquer.

2. Objective:

(a) 1-Bit and 2-Bit Character: We have two special characters:

The first character can be represented by one bit 0.

The second character can be represented by two bits (10 or 11).

Given a binary array bit that ends with 0, return true if the last character must be a one-bit character.

(b) Jewels and Stones: You're given strings jewels representing the types of stones that are jewels, and stones representing the stones you have. Each character in stones is a type of stone you have. You want to know how many of the stones you have are also jewels.

Letters are case sensitive, so "a" is considered a different type of stone from "A".

3. Script and Output:

(a) 1-Bit and 2-Bit Character

```
class Solution {
    public boolean isOneBitCharacter(int[] bits) {
        int i=0;
        int n=bits.length;
        while(i<n-1){
            if(bits[i]==1){
                i=i+2;
            }
            else{
                i=i+1;
            }
        }
        return i==n-1;
    }
}
```

Output

The screenshot displays a coding platform interface. On the left, the 'Submissions' tab is active, showing a submission status of 'Accepted' for a user named 'D...' submitted on Mar 31, 2024, at 14:53. The submission details include a runtime of 0 ms, which 'Beats 100.00% of users with Java', and a memory usage of 42.88 MB, which 'Beats 16.78% of users with Java'. A progress bar at the bottom indicates 100% completion. On the right, the 'Code' editor shows the Java code for the solution. Below the code, the 'Testcase' and 'Test Result' sections are visible. For 'Case 1', the input is 'bits = [1,0,0]' and the output is 'true', which matches the expected result 'true'.

(c) Jewels and Stones

```
class Solution {  
  
    public int numJewelsInStones(String jewels,  
String stones) {  
        HashMap<Character, Integer> hm = new  
HashMap<>();  
        for(int i = 0; i < stones.length(); i++){  
            char key = stones.charAt(i);  
            if(hm.containsKey(key))  
                hm.put(key, hm.get(key) + 1);  
            else  
                hm.put(key, 1);  
        }  
        int ans = 0;  
        for(int i = 0; i < jewels.length(); i++){  
            char key = jewels.charAt(i);  
            if(hm.containsKey(key))  
                ans = ans + hm.get(key);  
        }  
        return ans;  
    }  
}
```

}

Output :

The screenshot displays a submission page on a coding platform. The top navigation bar includes links for Problem List, Editorial, Solutions, and Submissions. The submission is for a problem named "Jewels and Stones" (partially visible). The submission status is "Accepted", submitted by "Dipak Rajb..." on Mar 31, 2024 at 15:06. The submission is labeled as a "Solution".

Runtime: 1 ms. Beats 56.10% of users with Java.

Memory: 41.75 MB. Beats 39.72% of users with Java.

The test results section shows two test cases, both passed. The input for Case 1 is "aA" for jewels and "aAAbbbb" for stones. The output is 3, which matches the expected result.

Case	Input (jewels)	Input (stones)	Output	Expected
Case 1	"aA"	"aAAbbbb"	3	3
Case 2				