

Is Array Subset

The question is that we have given 2 arrays A and B and we have to find that B is subset of A or not.

Based on the question I write down the ways to solve.

Way 1:-

First thought that comes in my mind is that ...

- First sort the Both array.
- Then Create a function that can sort the both array
- Then after take 2 nested for loops.

i → for outer loop
j → for inner loop.
it runs for a start to end.
j is for subser element

Add condition that

```
if (A[i] == B[j])  
{  
    count++;  
}
```

count is another variable that compare at end

At the end if (count == sb)
then the B is subset of A

Here the time complexity is

$$O(n \log n) + O(m \log m) + O(n \times m)$$

Way - 2

- Sorting is the same here
- but checking nested loops that we are taking will gonna change.
- We are just taking 1 while loop still there are 2 points.

i → A array
j → subset array

This is the final approach where we

```
int while (i < sa && j < sb)  
{  
    if (arr[i] == arr[j])  
    {  
        i++;  
        j++;  
    }  
    else if (arr[i] < arr[j])  
    {  
        i++;  
    }  
}
```

In the end we get time complexity

$$O(n \log n + m \log m)$$