

13. Intersection of Three Sorted Arrays Given three integer arrays arr1, arr2 and arr3 sorted in strictly increasing order, return a sorted array of only the integers that appeared in all three arrays

Code:

```
def arrays_intersection(arr1, arr2, arr3):  
    i, j, k=0,0,0  
    result=[]  
    while i<len(arr1) and j<len(arr2) and k<len(arr3):  
        if arr1[i]==arr2[j]==arr3[k]:  
            result.append(arr1[i])  
            i+=1  
            j+=1  
            k+=1  
        else:  
            if arr1[i] < arr2[j]:  
                i+=1  
            elif arr2[j] < arr3[k]:  
                j+=1  
            else:  
                k+=1  
    return result  
arr1 = [1,2,3,4,5]  
arr2 = [1,2,5,7,9]  
arr3 = [1,3,4,5,8]  
print(arrays_intersection(arr1,arr2,arr3))
```

output:

```
PS C:\Users\karth>  
PS C:\Users\karth> & C:/Users/karth/AppData/Local/Programs/Python/Python312/python.exe c:/Users/karth/OneDrive/Desktop/daa.py  
1  
4  
PS C:\Users\karth> 
```

Time complexity:

$F(n)=O(n)$