Count number of occurrences (or frequency) in a sorted array

```
#include <stdio.h>


int countOccurrences(int arr[], int n, int x) {
    int first = -1, last = -1, low = 0, high = n - 1;

    while (low <= high) {
        int mid = (low + high) / 2;
        if (arr[mid] == x) {
            first = (first == -1) ? mid : first;  // Set first only once
            last = mid;  // Update last
            low = mid + 1; // Search right for last
        } else if (arr[mid] < x) {
            low = mid + 1;
        } else {
            high = mid - 1;
        }
    }

    return (first == -1) ? 0 : last - first + 1; // Return count
}


int main() {
```

```
    int arr[] = {1, 2, 2, 2, 3, 4, 5, 5, 6}, x;
    printf("Enter element: ");
    scanf("%d", &x);
    printf("%d occurs %d times.\n", x, countOccurrences(arr, sizeof(arr) / sizeof(arr[0]), x));
    return 0;
}
```