

/* Q3. Inversion count for array indicates how far (or close) the array is from being sorted.
If the array is already sorted, then the inversion count is 0; but if the array is sorted in reverse order, the inversion count is the maximum. Given an array arr[]. The task is to find the inversion count of arr[].

Two elements arr[i] and arr[j] form an inversion if $a[i] > a[j]$ and $i < j$.
*/

```
#include <iostream>
using namespace std;

// Function to get inversion count
int inversionCount(int arr[], int n)
{
    int inverCount = 0;
    for(int i=n-1; i>0; --i)
    {
        for(int j=0; j<i; ++j)
        {
            if(arr[j]>arr[i]){
                ++inverCount;
                // cout<<endl<<inverCount<<" " "<<arr[i]<<" "<<arr[j];
            }
        }
    }
    return inverCount;
}

int main()
{
    int arr[] = {5,20,18,20,5,23,-8,100};
    // int arr[] = {-8,5,5,18,20,20,23,100};

    cout<<"Given array: ";
    for(int i=0; i<8; ++i)
        cout<<arr[i]<<" ";
    cout<<"\nInversion Count: "<<inversionCount(arr, 8);
    return 0;
}
```