S.No: 5	Exp. Name: ***Program to implementation of counting sort***	Date:

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Aim:

Program to sort a list of elements using Counting sort.

Source Code:

countSort.c

```
#include<stdio.h>
#include<conio.h>
int counting_sort(int A[], int k, int n){
   int i,j;
   int B[15],C[100];
   for(i=0;i<=k;i++){
      C[i] = 0;
   }
   for(j=1;j<=n;j++){
      C[A[j]] = C[A[j]]+1;
   }
   for(i=1;i<=k;i++){
      C[i] = C[i] + C[i-1];
   }
   for(j=n;j>=1;j--){
      B[C[A[j]]] = A[j];
      C[A[j]] = C[A[j]];
   }
   for(i=1;i<=n;i++){
      printf("%d ",B[i]);
   }
}
int main(){
   int n,k=0,A[15],i;
   printf("enter the no. of arry element: ");
   scanf("%d",&n);
   printf("enter the element: ");
   for(i=1;i<=n;i++){
      scanf("%d",&A[i]);
      if(A[i]>k){
         k=A[i];
      }
   }
   counting_sort(A,k,n);
   printf("\n");
   return 0;
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
enter the no. of arry element: 3
enter the element: 12 3 65
3 12 65