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Objective : sort a list of numbers using counting sort.

Implementation :

```c
#include <stdio.h>
void 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]] - 1;
    }
    printf("The Sorted array is : ");
    for (i = 1; i <= n; i++)
        printf("%d ", B[i]);
}
int main()
{
    int n, k = 0, A[15], i;
    printf("Enter the number of input : ");
    scanf("%d", &n);
    printf("\nEnter the elements to be sorted :\n");
    for (i = 1; i <= n; i++)
```

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```
    {
        scanf("%d", &A[i]);
        if (A[i] > k) {
            k = A[i];
        }
    }
    counting_sort(A, k, n);
    printf("\n");
    return 0;
}
```

```
Enter the number of input : 4

Enter the elements to be sorted :
4
5
1
3
The Sorted array is : 1 3 4 5

Process returned 0 (0x0)   execution time : 13.554 s
Press any key to continue.
```