

```
//  
// main.cpp  
// Insertion_Sort  
//  
// Created by Zhenlin Pei on 12/23/18.  
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//
```

```
// C program for insertion sort  
#include <stdio.h>  
#include <math.h>
```

```
/* Function to sort an array using insertion sort*/
```

```
void insertionSort(int arr[], int n)
```

```
{  
    int i, key, j;  
    for (i = 1; i < n; i++)  
    {  
        key = arr[i];  
        j = i-1;  
  
        /* Move elements of arr[0..i-1], that are  
         greater than key, to one position ahead  
         of their current position */  
        while (j >= 0 && arr[j] > key)  
        {  
            arr[j+1] = arr[j];  
            j = j-1;  
        }  
        arr[j+1] = key;  
    }  
}
```

```
// A utility function to print an array of size n
```

```
void printArray(int arr[], int n)
```

```
{  
    int i;  
    for (i=0; i < n; i++)  
        printf("%d ", arr[i]);  
    printf("\n");  
}
```

```
/* Driver program to test insertion sort */
```

```
int main()
```

```
{  
    int arr[] = {12, 11, 13, 5, 6};  
    int n = sizeof(arr)/sizeof(arr[0]);  
  
    insertionSort(arr, n);  
}
```

```
    printArray(arr, n);  
    return 0;  
}
```