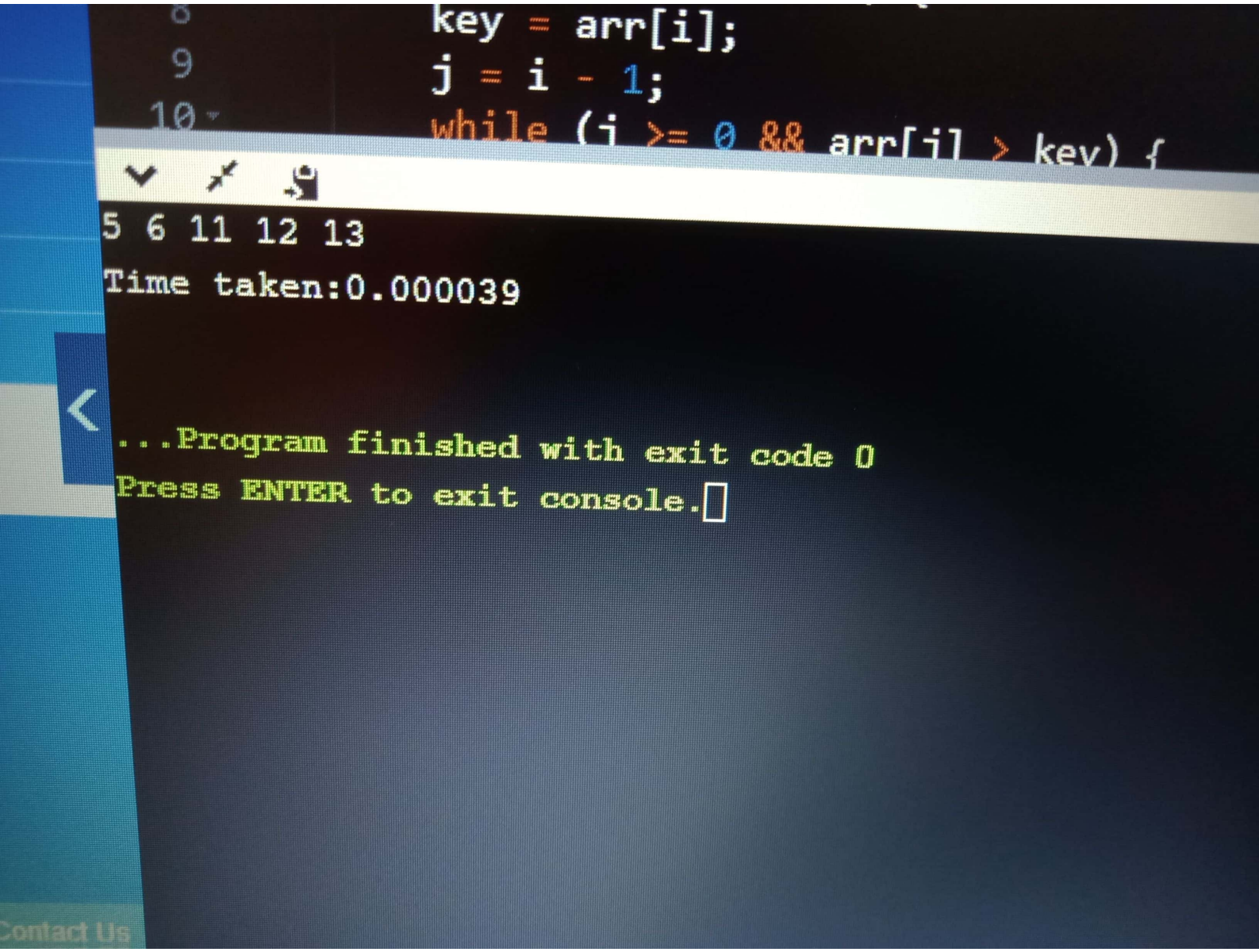
main.c

```c
#include <stdio.h>
#include <time.h>
#include <math.h>
void insertionSort(int arr[], int n)
{
    int i, key, j;
    for (i = 1; i < n; i++) {
        key = arr[i];
        j = i - 1;
        while (j >= 0 && arr[j] > key) {
            arr[j + 1] = arr[j];
            j = j - 1;
        }
        arr[j + 1] = key;
    }
    for (i = 0; i < n; i++)
        printf("%d ", arr[i]);
    printf("\n");
}
int main()
{
    int arr[] = { 12, 11, 13, 5, 6 };
    int n = sizeof(arr) / sizeof(arr[0]);
     clock_t start,end;
    start=clock();
    insertionSort(arr, n);
    end= clock();
    printf("Time taken:%f\n",(((double)(end-start))/CLOCKS_PER_SEC));
    return 0;
}
```



* Insertion sort:

```
#include <stdio.h>
#include <time.h>
int main()
{
int n, i, j, temp;
clock_t start, end;
printf ("Enter number of elements: \n");
scanf("%d", &n);
int arr [n];
printf ("\n The elements are: ");
for (i=0; i<n ; i++)
{
arr [i] = rand() % 10000;
printf ("%d", arr[i]);
}
start = clock();
for (i=0; i<80000000 ; i++);
for(i=1; i<=n - 1; i++)
{
j = i;
while( j>0 && arr[j - 1] > arr[j])
{
temp = arr[j];
arr [j] = arr [j-1];
arr[j-1] = temp;
```

```
end = clock();
Printf("\nTime taken to sort %d numbe
is %f secs", n, ((double)(end-start))/CLO
  PER_SEC));
Printf ("Sorted list in ascending order: \n
for(i=0; i<=n-1 ; i++)
{
Printf ("%d", arr[i]);
}
return 0;
}
```