

CENG 104

Computer Programming 2

HOMEWORK 1

Due by 23:55pm, 13.03.2016

In this assignment, you will implement **Insertion Sort** algorithm. However, this assignment is not an only implementation assignment. To be able to do this homework you should follow these steps;

1. You will search what **Insertion Sort** is.
2. You will understand how it works.
3. After you learned Insertion Sort well, you will implement Insertion Sort algorithm **using pointers** and **pointer arithmetic**.

After you implement the algorithm you can test your algorithm with creating an integer array whose size is 100 and fully with random numbers.

How insertion sort Algorithm works?


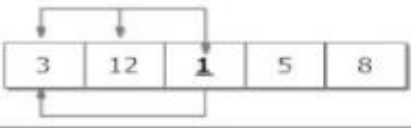
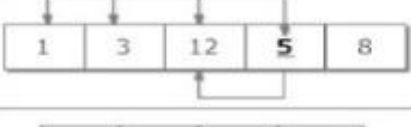


Step 1		Checking second element of array with element before it and inserting it in proper position. In this case, 3 is inserted in position of 12.
Step 2		Checking third element of array with elements before it and inserting it in proper position. In this case, 1 is inserted in position of 3.
Step 3		Checking fourth element of array with elements before it and inserting it in proper position. In this case, 5 is inserted in position of 12.
Step 4		Checking fifth element of array with elements before it and inserting it in proper position. In this case, 8 is inserted in position of 12.
		Sorted Array in Ascending Order

Figure: Sorting Array in Ascending Order Using Insertion Sort Algorithm

- You can search more details on web. Please understand the algorithm first before start coding.
- https://en.wikipedia.org/wiki/Insertion_sort

IMPORTANT:

- Make sure that your files are named in correct format.
- Please make a good design. The code should be properly written such that unnecessary information should be prevented.
- Use pre-defined methods if you need.
- Try to use whatever you learned about C programming until now in your codes.
- All requirements should be met.
- This homework should be done individually.
- Please do it on your own, you can read tutorials and forums, many examples exist on the internet.
- You should be sure to understand whatever you write in your code, we will randomly select and ask you to describe your code.
- For your questions, use mailgroup. Ask to everybody so that everybody sees the answers. No private mails for the homework please.
- Cheating is forbidden, no excuse will be accepted.