

# CENG 103

## Computer Programming 1

### HOMEWORK 4

Due by 23:55pm, 14.12.2016

In this assignment, you are asked to build a C Program that should provide the following steps:

1. **Store** grades of 10 students that will be entered by the user **in an array** called as **grades**.  
(Check whether the entered value is between 0-100)
2. Calculate the average of **grades**
3. Calculate the lowest grade of **grades**
4. Calculate the highest grade of **grades**
5. Show distribution of grades by printing stars according to the shown ranges  
(For example there are two grades, 76 and 78 between 70-79, so print two stars for this range)

**Sample Output:**

The grades are:

```
Student 1: 87
Student 2: 68
Student 3: 94
Student 4: 100
Student 5: 83
Student 6: 78
Student 7: 85
Student 8: 91
Student 9: 76
Student 10: 87
```

Class average is 84.90

Lowest grade is 68

Highest grade is 100

Grade distribution:

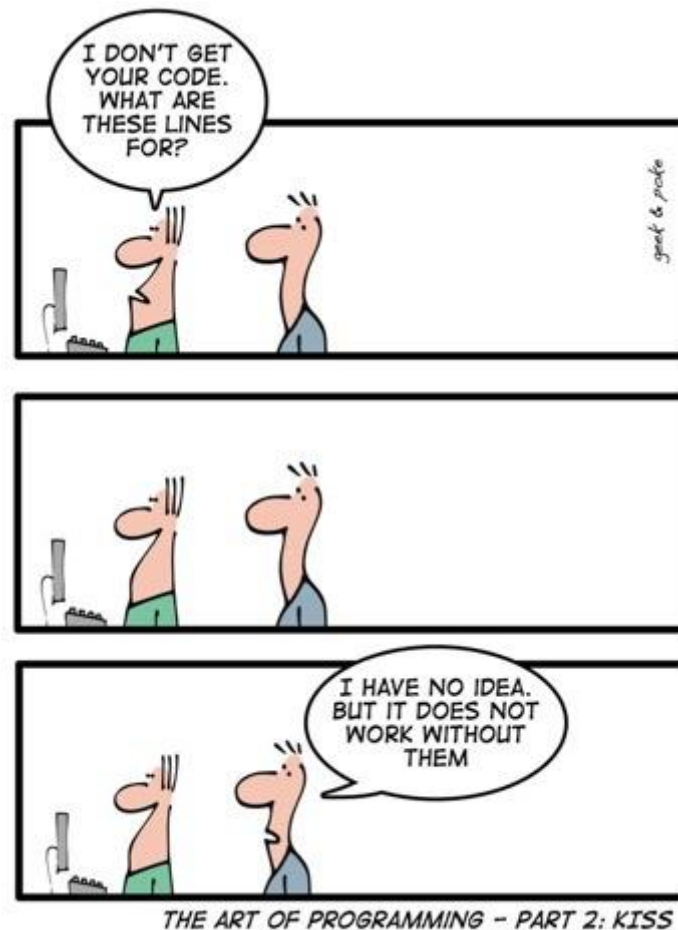
```
00-09:
10-19:
20-29:
30-39:
40-49:
50-59:
60-69: *
70-79: **
80-89: ****
90-99: **
100: *
```

**BONUS (50 pts):** If you write the program by using functions and passing array as follows:

- 1- Use main function for the 1. Step
- 2- Write user-defined functions for 2., 3., 4., and 5. steps separately like `getAverage`, `getLowest`, `getHighest`, `showDistribution` functions with appropriate parameters and return the result

Sample output will be the same.

Have fun!



**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 may 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.