Practice S05P04: Partition

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Week of release: Week 5

Objective: Array

Task statement:

Write a program **partition.c** that asks user to input the number of elements of an integer array and the value of each element into the array. After that, it asks for a certain *pivot* value to partition the array such that all elements whose values are less than *pivot* are moved to the left of all elements whose values are greater than or equal to *pivot*. The modified array is then printed.

Your program should include a **partition()** function.

You may assume that there are at most 20 elements in the array.

(This problem is similar in spirit to Week 3 discussion question 5 on white and black balls.)

Note: There might be other possible arrangements after the partitioning. If you submit your program to CodeCrunch, it could only check one particular arrangement, so if your program fails its tests, please check your output manually.

Sample runs:

```
Enter the number of elements: 6
Enter 6 integers: 21 9 3 18 8 12
Enter pivot: 10
9 3 8 18 21 12

Enter the number of elements: 5
Enter 5 integers: 99 88 77 66 55
Enter pivot: 66
55 88 77 66 99
```