CS 1713
Introduction to Computer Programming II
Recitation 8

1. (100 pts) Write a program to find the number of elements above the average value in a file. Load the file to an array, compute average using the array and find the number of elements above average using the array. Use dynamic memory allocation using *calloc* to allocate the array and if the allocated size is not enough, use *realloc* to double the size of the array. Start with an array of size 10. Make sure you free the memory you allocated before you end the program. You can implement the following functions in your program.

   ```
   double average(int *ptr, int size)
   int aboveaverage(int *ptr, int size, double average)
   ```

   Sample execution is given below. Print a message on the screen when you allocate, reallocate and free the memory as shown below. Use argc, argv and file operations for this recitation.

   ```
   fox01> recitation8 a.txt
   Allocated 10 integers
   Reallocated to 20 integers
   Reallocated to 40 integers
   Reallocated to 80 integers
   Reallocated to 160 integers
   47 elements are above average of 477.455446
   Dynamic array freed
   ```

Submit your program electronically using the blackboard system