

Create a program that creates an array of structures. Each structure will have two elements, a numeric item id (integer), and a cost (floating point). First, create a function "CreateArray" that queries the user for an item count and creates an array with that many items in it. The size and the array pointer should be stored in global variables. Next create a function "GetData" that will fill the array by calling the function "GetItem" once for every element of the array. "GetData" will pass the address of a structure to "GetItem" to compute the address of the structure, use the formula $A+i$, where A is the global variable holding the array address and i is the index variable for the loop. The function "GetItem" will query the user for a numeric ID number and a cost. These items will be stored in the structure passed to "GetItem" by the "GetData" function.

Write another function "Average" which must be given the address of an array and its size. The function will return the average cost of all elements in the array. Use THIS FUNCTION to compute the over-all average, the average of the first third of the array, the average of the second third of the array, and the average of the last third of the array. Because the size of the array may not be a multiple of three, the last third may have more elements than the first third or the second third. If the array has 9 elements then all three thirds have 3 elements. But if the array has 10 elements then there are 3 elements in the first third and in the second third, but the last third has four elements. If there are 11 elements, then the three thirds have 3, 3, and 5 elements respectively.

Print out the over-all average, the first third average, the second third average and the last third average, each on a separate line.

You may not discuss this assignment with anyone other than the professor or the lab instructor.

No late work will be accepted.