

Answers to Questions from P1.2

Name: Georges Youssef

Student ID: 103070491

How many Counter objects were created?

A total of 2 counter objects were created. This is because myCounters[2] is pointing to the location of myCounters[0] and is not actually creating a new instance of itself

Variables declared in main() are different to the objects created when we call new. What is the relationship between the declared variables in main and the objects created?

Variables are primitive data types whereas objects are user defined data types. The relationship can be viewed as a collection of primitive data types being used to create a user defined data type.

Resetting the counter in myCounters[2] also changes the value of the counter in myCounters[0]. Why does this happen?

myCounter[2] will reset when myCounter[0] resets. This is because when myCounter[2] was initialized with the location of myCounter[0] thus creating a link between the two.

The key difference between memory on the heap compared to the stack and the heap is that the heap holds dynamically allocated memory. What does this mean ?

Dynamic memory allocation means that the size of memory being used can be increased to accommodate the task that is being run

On which are objects allocated (heap or stack) ? On which are local variables allocated (heap or stack) ?

Objects are allocated on the heap
Local variables are allocated on the stack

What does the new() method do when called for a particular class What does it do and what does it return?

When new is called on a class it *creates a new user defined data type* then it returns *the stored values*.

Draw a diagram showing the locations of the variables and objects in main.

