

Task 3.1P Answer Sheet

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1. How many Counter objects were created?

A total of 2 objects.

2. 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 assigned to> objects. Variables that are declared in main is a stack that has a memory address for objects that are on heap.

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

myCounter[2] and myCounter[0] [since its pointing to the same object memory, when a change occurs the pointed object will also change both variables.]

4. 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 the program will automatically allocate memory to the object that is on the heap and the memory address will return back to the variable that holds the object.

5. 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

6. 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 an object of the called class* then it returns *the memory address of the new initialised object*.

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

