Task 3.1P Answer Sheet

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1. How many Counter objects were created?

   3 counter object was created , they were myCounters[0] , all the way to myCounter[2] but only 2 were officially create since 0 and 2 are basically the same

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 created from the object , a reference of the object is kept in the variable.

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] are referencing the same object which is Counter , so when it is called to “reset” , it modifies the shared object which changes both the values shown in the result screenshot.

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

   Dynamic memory allocation means the size and lifetime of an objects can be managed at the time of usage

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 a new class instance which allocates memory to the heap* then it returns *to its references.*

7. Draw a diagram showing the locations of the variables and objects in main (scan of hand-drawn diagram is acceptable).