

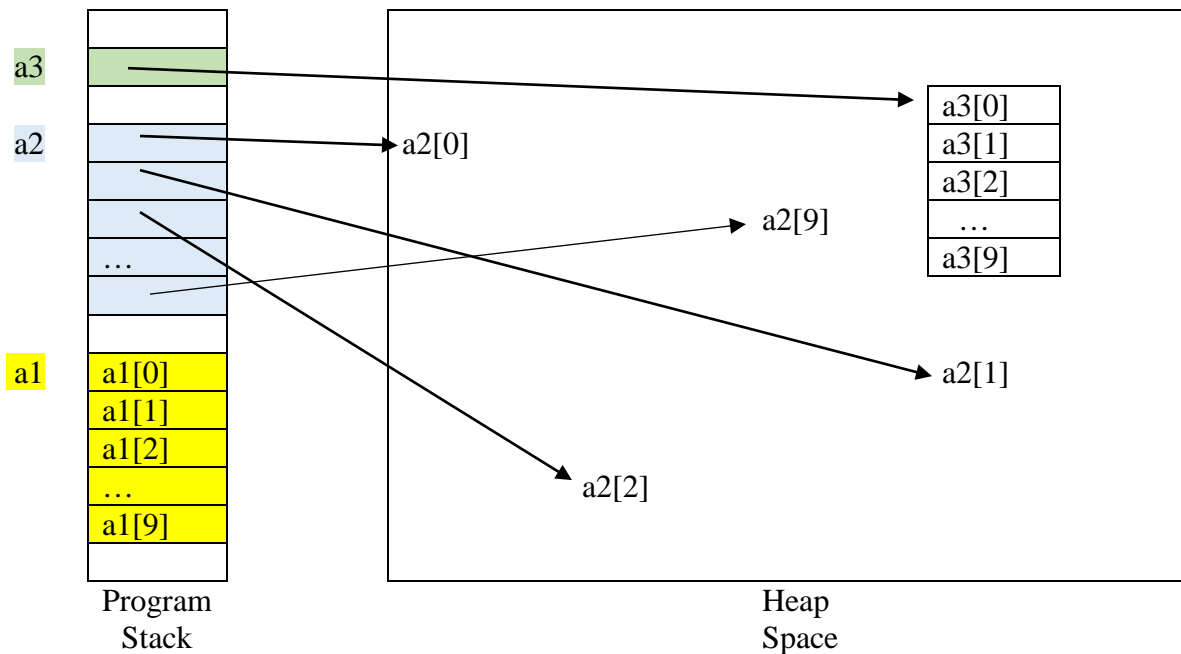
The following three variable declarations all could be used to allocate some form of an array with 10 instances of the structure arrElem. Read the descriptions of what is being allocated by each statement:

arrElem a1[SIZE]; An array of 10 instances allocated on the stack.

arrElem* a2[SIZE]; An array of 10 pointers allocated on the stack.
 Each pointer would refer to a unique instance
 allocated on the heap.

arrElem* a3; A single pointer allocated on the stack.
 The pointer would refer to an array of 10
 instances allocated on the heap.

5. Draw a picture including both the stack memory space and the heap memory space that would show each of the above 3 arrays **after they were properly created/allocated**.



Name: _____ NetID: _____

6. What occurs when `init2()` is called at the line marked: `/* FIFTH CALL */`

7. The call to `init2()` at the line marked: `/* SIXTH CALL */` should result in a run-time error. What is the root cause of this run-time error?

8. What code must be **ADDED** to stop the run-time error specified in Q. 7 from occurring? Also specify where this code needs to be located. **Do not change how `a2` is declared or how `init2()` is called.** HINT for Question 8 (and 10): Notice how the `printf` statements immediately after the calls are written. Second hint: you should notice there are no `malloc()` statements in the code for variable `a2`.

Name: _____ NetID: _____

9. The call to `init2()` at the line marked: `/* SEVENTH CALL */` should result in a run-time error (but may not) because there is an error in the code. What is the root cause of this run-time error?

10. What code must be **ADDED** to stop the run-time error specified in Q. 9 from occurring? Also specify where this code needs to be located. **Do not change how `a3` is declared or how `init2()` is called.** HINT for Question 10 (and 8): Notice how the `printf` statements immediately after the calls are written. Second hint: you should notice that there are no `malloc()` statements in the code for variable `a3`.