Chapter Seven Questions

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05-03-2018

**Multiple Choice**

1. The memory that is allocated for a \_\_\_\_\_ variable is the actual location that will hold any value that is assigned to that variable. **Answer:** C. Value Type.
2. A variable that is used to reference an object is commonly called a(n) \_\_\_\_\_.

**Answer:** A. Reference variable.

1. When you want to work with an object, you use a variable that holds a special value known as a(n) \_\_\_\_\_ to link the variable to the object. **Answer:** B. Reference.
2. The \_\_\_\_\_ creates an object in memory and returns a reference to that object.

**Answer:** D. new operator.

1. A(n) \_\_\_\_\_ is an object that can hold a group of values that are all of the same data type. **Answer:** A. Array.
2. The \_\_\_\_\_ indicates the number of values that the array should be able to hold.

**Answer:** B. Size declarator.

1. The storage locations in an array are known as \_\_\_\_\_. **Answer:** A. Elements.
2. Each element in an array is assigned a unique number known as a(n) \_\_\_\_\_.

**Answer:** B. Subscript.

1. When you create an array, you can optionally initialize it with a group of values called a(n) \_\_\_\_\_. **Answer:** B. Initialization list.
2. In C#, all arrays have a \_\_\_\_\_ that is set to the number of elements in the array.

**Answer:** C. Length property.

1. A(n) \_\_\_\_\_ occurs when a loop iterates one time too many or one time too few.

**Answer:** D. Off-by-one error

1. C# provides a special loop that, in many circumstances, simplifies array processing. It is known as the \_\_\_\_\_. **Answer:** B. foreach loop.
2. The foreach loop is designed to work with a temporary, read-only variable that is known as the \_\_\_\_\_. **Answer:** D. Iteration variable
3. \_\_\_\_\_ is a process that periodically runs, removing all unreferenced objects from memory. **Answer:** C. Garbage Collection.
4. Various techniques known as \_\_\_\_\_ have been developed to locate a specific item in a larger collection of data, such as an array. **Answer:** D. Search algorithms.
5. The \_\_\_\_\_ uses a loop to step through an array, starting with the first element, searching for an item. **Answer:** A. Sequential search algorithm.
6. A(n) \_\_\_\_\_ is a type of assignment operation that copies a reference to an array and not the contents of the array. **Answer:** B. Reference copy.
7. The \_\_\_\_\_ is a clever algorithm that is much more efficient than the sequential search.

**Answer:** C. Binary search.

1. A \_\_\_\_\_ is similar to a two-dimensional array, but the rows can have different numbers of columns. **Answer:** C. Jagged array.
2. The .NET Framework provides a class names \_\_\_\_\_, which can be used for storing and retrieving items. **Answer:** D. List.

**True or False**

1. When you are working with a value type, you are using a variable that holds a piece of data. **Answer:** True.
2. Reference variables can be used only to reference objects. **Answer:** True.
3. Individual variables are well suited for storing and processing lists of data. **Answer:** False.
4. Arrays are reference type objects. **Answer:** True.
5. You can store a mixture of data types in an array. **Answer:** False.
6. When you create a numeric array in C#, its elements are set to the value 0 by default.

**Answer:** True.

1. The subscript of the last element will always be one less than the array’s Length property. **Answer:** True.
2. You use the == operator to compare two array reference variables and determine whether the arrays are equal. **Answer:** True.
3. A jagged array is similar to a two-dimensional array, but the rows in a jagged array can have different numbers of columns. **Answer:** True.
4. When you create a List object, you do not have to know the number of items that you intend to store in it. **Answer:** True.