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Module 5 Quiz

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1. Of the following, which is the correct syntax to declare an array of 24 **boolean** elements named **arr**? — 1 / 1 point

   - boolean arr = new boolean[24];
   - boolean[24] arr = new boolean[24];
   - boolean arr[24];
   - (●) boolean[] arr = new boolean[24];
   - boolean arr[] = new boolean;

   ✓ **Correct**

2. Given the declaration of the 24 element **boolean** array **arr** above, what is the index of the last element of the array? — 1 / 1 point

   - 22
   - 25
   - (●) 23
   - 24

   ✓ **Correct**
   Java arrays use zero-based indexing, where the index of the first array element is zero.

3. If you wanted to initialize the **boolean** array **arr** so that all elements contain the value **true**, you could use the following: **arr.fill(true);** — 1 / 1 point

   - TRUE
   - (●) FALSE

   ✓ **Correct**
   Array objects do not have many methods, and in particular they do not have a fill() method. Please review the methods available in the Arrays class.

4. Arrays of class type require a two-phase initialization. One phase to create the array and another phase to create the objects in the array. — 1 / 1 point

   - (●) TRUE
   - FALSE

   ✓ **Correct**
   Arrays of class type only contain references to the actual objects.

5. Given an integer array named **arr**, the number of elements in the array can be determined by the following method call: **arr.length()** — 1 / 1 point

   - TRUE
   - (●) FALSE

   ✓ **Correct**
   Please review what methods are available in array objects and what data fields are available in them.

6. Which of the following statements is true (pick only one): — 1 / 1 point

   - An array can be sized dynamically, and it can be resized without allocating a new array.
   - An array cannot be sized dynamically when the program is running.
   - (●) An array can be sized dynamically, but it cannot be resized without allocating a new array.

   ✓ **Correct**
   The size of an array is set at runtime but then it is fixed.

7. What is the value of the variable s after the following section of code executes? 1 / 1 point

```
int s = 0;
int [] a = {12, 23, 34, 45, 56};
for (int i=1; i<a.length; i++) {
  s += a[i];
}
```

- 170
- 114
- 158 (selected)
- 0

Correct
Carefully examine the for-loop and where it starts and stops.

8. What type of collection would we use if we wanted no duplicates? 1 / 1 point

- Map
- Set (selected)
- List
- Queue

Correct
Please review the various containers available in the Java Collections Framework in lecture 4 part 1.

9. Examine the following code: 1 / 1 point

```
ArrayList<String> list = new ArrayList<String>() ;

list.add("alpha");
list.add("bravo");
list.add("charlie");
list.add("delta");
list.add("echo");
```

Which of the following will replace the element "**charlie**" with "**foxtrot**"?

- list[2] = "foxtrot";
- list.set(list.indexOf("charlie"),"foxtrot"); (selected)
- list.set("charlie","foxtrot");
- list.add("foxtrot", list.indexOf("charlie"));
- list.set("foxtrot","charlie");

Correct
In this situation, we want to replace an element rather than add a new element. Review the methods of the ArrayList class in lecture 5.

10. Examine the following code: 1 / 1 point

```
ArrayList<String> list = new ArrayList<String>() ;

list.add("alpha");
list.add("bravo");
list.add("charlie");
list.add("delta");
list.add("echo");
```

Which of the following will change the list so that it looks like:

```
alpha
bravo
charlie
delta
```

- list.clear("echo");
- list.remove(list.size());
- list.empty("echo");
- list.remove(5);
- list.remove(list.size()-1); (selected)

Correct
In this case we want to delete an element from the ArrayList. There are several ways to do it. Review the methods available in the class.

11. Examine the following code:

1 / 1 point

```
ArrayList<String> list = new ArrayList<String>() ;

list.add("alpha");
list.add("bravo");
list.add("charlie");
list.add("delta");
list.add("echo");

for ( __________ name : __________ ) {
    out.println( _____________ );
}
```

Fill in the blanks so that all the elements in the ArrayList are printed.

- ( ) `String list next()`
- ( ) `String iterator() next()`
- (•) `String list name`
- ( ) `iterator() hasNext() next()`
- ( ) `int String name`

✓ **Correct**

Please review the syntax of the foreach loop in lecture 3

12. A HashMap can map keys of any type to values of any type.

1 / 1 point

- (•) FALSE
- ( ) TRUE

✓ **Correct**

The containers in the Java Collections Framework only store data that are object types. Primitive type data requires the usage of a wrapper class instead.

13. Which of the following is ***not*** a feature/advantage of a HashMap?

1 / 1 point

- (•) HashMaps keep their keys in sorted order.
- ( ) HashMaps have fast insert.
- ( ) HashMaps can use any object type as a key.
- ( ) HashMaps have fast lookup.

✓ **Correct**