Please read Sections 7.1 through 7.6 of the textbook and then answer the following, trying not to look at your notes or at the textbook. Quiz #9, on Fri. 4 Nov., will consist exclusively of questions taken from the Part 1 of this homework.

Ex. 1. Can an array hold values of different data type (for instance, char and double)?

Ex. 2. Write a statement that creates a 10-element int array referenced by the variable numbers.

Ex. 3. In the following, what is the value of the size declarator? What is the value of the subscript?

```java
int[] numbers;
numbers = new int[8];
numbers[4] = 9;
```

Ex. 4. What is wrong with the following array declaration?

```java
int[] books = new int[-1];
```

Ex. 5. Draw the content of the scores array once those statements have been executed

```java
int[] scores = new int[3];
scores[0] = 13;
scores[2] = 25;
```

Ex. 6. What would be printed by the following code?

```java
int[] values = new int[6];
for (int i = 0; i < 6; i++)
    values[i] = (i*2);
for (int j = 0; j < 6; j++)
    System.out.println(values[j]);
```

Ex. 7. Suppose the variable dailyPushUp references an int array with 7 elements. Write a for loop that prints each element of the array dailyPushUp.

Ex. 8. What is “array bounds checking”? When does it happen?

Ex. 9. Is there an error with the following code? If you think there is one, explain it, otherwise draw the content of the myIncomes array once those statements have been executed.

```java
double[] myIncomes = new double[5];
myIncomes[1] = 3.5;
// No income on day two.
myIncomes[3] = 5.8;
myIncomes[4] = 0.5;
myIncomes[5] = 1.5;
```
Ex. 10. What would be the size of the test array after the following statement has been executed?

```java
int[] test = {3, 5, 7, 9};
```

Ex. 11. What is the difference, if any, between the following two statements?

```java
int[] num, scores;
int num[], scores;
```

Ex. 12. Write a statement that creates and initializes a double array with the values 12.5, 89.0 and 3.24.

Ex. 13. What is the value of count and the content of number once the following has been executed?

```java
int count = 2;
int[] number = {3, 5, 7};
number[count--] = 8;
number[count]--;
```

Ex. 14. Suppose we have an array named temp that has been declared and initialized. How can we know the number of elements in this array?

Ex. 15. Describe what the following code would do.

```java
int[] record = {3, 8, 11};
int accumulator = 0;
for (int i : record)
    accumulator += i;
```

Ex. 16. Assuming we have two int arrays of the same size, firstA and secondA, write a statement that copy the content of firstA into secondA.

Ex. 17. Write a method (header included) that takes as argument an int array, and prints the value of each element of that array.

Ex. 18. Write a method (header included) that takes as argument an int array, and stores the value 10 in each element of that array.

Ex. 19. What is the return type of a method returning an String array?

Ex. 20. Suppose list0fGuests is a String array. Write a statement that prints the length of the third element in list0fGuests.
**Part II — Programming Exercises**

**Ex. 1.** We're going to write a “library” of methods to manipulate double arrays. More precisely, we want to write the following (static) methods:

- A `printArray` method, that takes as argument a double array, and prints the content of each of its element.
- A `copyArray` method, that takes as argument two double arrays, and copy the content of the first one in the second one if the two arrays have the same size.
- A `setArray` method, that takes two arguments: a double array, and a double. This method should set the value of the each element of the array to be the double given as argument.
- An `avgArray` method, that takes a double array as argument, and return the average of all the values in that array.

Start by thinking about your program, and if you feel like you're completely stuck, or to make sure that your code is sensible, you can compare what you wrote with section 7.4 of your textbook. Use the following application program to make sure that your methods are sensible:

```java
public class ArrayLib{
    public static void main(String[] args){
        double[] test1 = {3.5, 4, 4.5};
        double[] test2 = new double[3];
        printArray(test1);
        // Should print 3.5 4.0 4.5
        copyArray(test1, test2);
        test2[0]+=3;
        printArray(test2);
        // Should print 6.5 4.0 4.5
        setArray(test1, 3);
        System.out.print(avgArray(test1));
        // Should print 3.0
        System.out.print(avgArray(test2));
        // Should print 5.0
    }
}
```

Of course, you're welcome to adapt this application program to make more tests!

" 발표 "

Eighty percent of the world's problems could be solved if people were only willing to be rational. — John F. Kennedy

Fri. 28 Oct.