Array Review Worksheet

1. What is an array in Java?
   
   *A special kind of object used to store a collection of data*

2. Declare a 2-dimensional array called *table* of base type *int* with 4 rows and 5 columns in each row.

   ```java
   int [][] table = new int[4][5];
   ```

3. Write two printArray methods such that the method name is overloaded. One method should print a 1D array and the other should print a 2D array.

   ```java
   public static void printArray(int[] array)
   {
     for(int i = 0; i < array.length; i++)
         System.out.print(array[i] + " ");
     System.out.println();
   }

   public static void printArray(int[][] arr)
   {
     for (int row = 0; row < arr.length; row++)
     {
       for (int col = 0; col < arr[row].length; col++)
         {
           System.out.print(arr[row][col] + " ");
         }
       System.out.println();
     }
   }
   ```
4. Write some Java code that will declare an array named `entry` that has length 3, has `SalesAssociate` as its base type, and is filled with 3 identical records. The records use the name “Jane Doe” and sales of $5000. Use a `for` loop.

Assume the `SalesAssociate` class looks like the following:

```java
public class SalesAssociate
{
    private String name;
    private double sales;
    public SalesAssociate(String initialName, double initialSales)
    {
        this.name = initialName;
        this.sales = initialSales;
    }
}
```

```java
SalesAssociate[] entry = new SalesAssociate[3];
for(int i = 0; i < entry.length; i++)
{
    entry[i] = new SalesAssociate("Jane Doe", 5000);
}
```

5. Consider the list \{13, 9, 15, 2\}. Show the list after each iteration of the outer loop for bubble and selection sorting algorithms.

<table>
<thead>
<tr>
<th>Bubble</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 9 15 2</td>
<td>13 9 15 2</td>
</tr>
<tr>
<td>9 13 15 2</td>
<td>2 9 15 13</td>
</tr>
<tr>
<td>9 13 2 15</td>
<td>2 9 15 13</td>
</tr>
<tr>
<td>9 2 13 15</td>
<td>2 9 13 15</td>
</tr>
<tr>
<td>2 9 13 15</td>
<td></td>
</tr>
</tbody>
</table>

(I showed every time a change was made for bubble sort, not just the array after each iteration of the outer loop)