- **CODE EVALUATION.**

  For each of the following, give the output of the code.

```
int[] ints = { 2, 5, 8, 9, 1 };
for ( int i = 0; i < ints.length - 1; i++ )
{
    int temp = ints[i];
    ints[i] = ints[i + 1];
    ints[i + 1] = temp;
}
for ( int i = 0; i < ints.length; i++ )
{
    System.out.print( ints[i] + " " );
}
```

```
String[] words = { "this", "is", "a", "test" };
for ( int i = 0; i < words.length; i++ )
{
    int length = words[i].length();
    while ( length > 0 )
    {
        System.out.print( words[i].charAt( length - 1 ) );
        length--;
    }
    System.out.println( "" );
}
```

- **CODING NESTED LOOPS**

  Fill in the `main()` method in the class below so that when it runs it prints output (using `System.out.println()`) that looks like this:

```
0
0 1
0 1 2
0 1 2 3
0 1 2 3 4
0 1 2 3 4 5
```

  For full points, your code must use a pair of **nested loops**, each of which is actually used to generate the output. (You may use whatever types of loops you choose.)

```
public class Main
{
    public static void main( String[] args )
    {









    }
}
```

- **(10 pts.) CODE COMPLETION.**

  Consider the class below. It uses a supplier class called `ArrayManager`. That class has a method called `sumArrays()`. When run, this method should act as follows:

  (a) If the arrays are of *identical* length, then it should return a new array of the *same* length, where each element is the sum of the elements at the same index in the input arrays. So, in the first call below, it would sum the first elements of the inputs, then their second elements, and so on, and output array `out1` would look like:

  $$\{2,\ 3,\ 5,\ 6,\ 8\}$$

  (b) If the arrays are of *different* lengths, then it will return an array containing the sums of all elements for all of those indices that occur in *both* input arrays; for all of the indices of the *larger* array only, the value will simply be copied (as if we added 0). Thus, for the second call, the output array `out2` would be

  $$\{2, 3, 2, 2, 3\}$$

  Write the `ArrayManager` class, in its entirety.

```
public class Main
{
     public Main()
     {
        int[] arr1 = { 1, 2, 3, 4, 5 };
        int[] arr2 = { 1, 1, 2, 2, 3 };
        int[] arr3 = { 1, 2 };

        ArrayManager manager = new ArrayManager();
        int[] out1 = manager.sumArrays( arr1, arr2 );
        int[] out2 = manager.sumArrays( arr2, arr3 );
     }
}
```