1. Write a program that does the following inside the `main()`:
   - Declare an array of 10 integers.
   - Use a `for` loop to initialize the value of each array element to the same value as its index. This means that, if my array is named `A`, then the value of `A[0]` will be 0, and the value of `A[1]` will be 1, etc.
   - Use another `for` loop to display the value of each array element.

   Compile and run your code to make sure it works.

2. Modify the program to declare the array as a *global variable*. This means that the array is declared outside of the `main()` function, and not inside any other function.
   Compile and run your code to make sure it works.

3. Modify the program to declare a global *constant* called `MAX` and set its value to 25. Change the definition of your array `A` to contain `MAX` elements, instead of 10.
   Compile and run your code to make sure it works.

4. Modify the program by creating a function whose prototype looks like this:
   ```
   void displayArray()
   ```
   which displays the contents of the array.
   Modify the `main()` function to call `displayArray()` to output the contents of `A` (instead of how it was displaying before).
   Compile and run your code to make sure it works.

5. Modify the program by creating a function whose prototype looks like this:
   ```
   void muddleArray()
   ```
   which adds a random number to each entry in the array.
   Modify the `main()` to call `muddleArray()`. Call `displayArray()` both before and after calling `muddleArray()`.
   Compile and run your code to make sure it works.

6. *Challenge #1:*
   Modify the program to determine and display the value of the *largest* entry in the array (after calling `muddleArray()`).

7. *Challenge #2:*
   Modify the program to determine and display the *average* value stored in the array (after calling `muddleArray()`).