CSCI165 Computer Science II
Array Processing

Install Eclipse and familiarize yourself with its features (especially debugging!!) before beginning this exercise.

- **https://www.tutorialspoint.com/eclipse/index.htm**
- **https://www.wikihow.com/Debug-with-Eclipse**

Create a new Eclipse Java project. Add a new class named ***ArrayMethods.java.*** You are given the file ***number_list.txt*** that contains 1000 numbers. Copy this file into the ***project_root*** directory for this project, inside the Eclipse Workspace. In the main method for this project define an array of integers of length 1000.

Write the following static methods

1. **public static void fillArray(int[] array, String fileName)** Fill ***array*** with the data from ***fileName***

2. **public static int findMax(int[] array)** Find and return the largest number in ***array***

3. **public static int findMin(int[] array)** Find and return the smallest number in ***array***

4. **public static int range(int[] array)** Calculate and return the range of ***array***. The range is the difference between the smallest and largest values. This method should call ***findMin*** and ***findMax***

5. **public static int[] percentChange(int[] array)** Return a list of percentage of change values between adjacent items in ***array***. Index 0 of this array will hold the percent change from array[0] to array[1]; Index 1 will hold percent change from array[1] to array[2] . . . etc . . . Percent can be negative to show a decrease. The new array will need to be one item smaller. If you are not aware of the percent change formula use your search engine of choice to research. This method would be a **great example** to use with the Eclipse debugger. Include descriptions of how you used the debugger. An example follows

Index	0	1	2	3	4	5
Array	11	58	43	29	98	56
Pct Chg array	427%	-25.86%	-32.56%	237.93%	-42.86%