CSCI-101 Programming II

Lab 9a

Create a directory named **lab9** in your Git repo on cs.bridgewater.edu. In the **lab9** directory, write a program named **Lab9** that satisfies the following requirements.

Create an ArrayList that holds 20 random integers whose values are between 1 and 20.

By only using the list, streams, and stream functions print to the screen the following:

- [ ] Print "list: " followed by the elements in the list on a single line.
- [ ] Print "count: " followed by the number of elements in the list.
- [ ] Print "sorted: " followed by the elements in the list in sorted order from lowest to highest.
- [ ] Print "reverse sorted: " followed by the elements in the list in sorted order from highest to lowest.
- [ ] Print "distinct: " followed by the distinct elements in the list.
- [ ] Print "distinct count: " followed by the number of distinct elements in the list.
- [ ] Print "max: " followed by the largest value in the list.
- [ ] Print "min: " followed by the smallest value in the list.
- [ ] Print "last 5: " followed by the last 5 elements in the list.
- [ ] Print "last 5 sorted: " followed by the last 5 elements in the list in sorted order from lowest to highest.
- [ ] Print "largest 5: " followed by the largest 5 values in the list.
- [ ] Print "smallest 5: followed by the smallest 5 values in the list.
- [ ] Print "even: " followed by the even elements in the list.

- [ ] Print "even gt 10: " followed by the even elements in the list that are greater than 10.

- [ ] Print "sorted even gt 10: " followed by a sorted list of the even elements in the list that are greater than 10.

- [ ] Print "even gt 10 count: " followed by the number of even elements in the list that are greater than 10.

- [ ] Print "no even: " followed by "true" if the list does not contain any even integers and "false" otherwise.

- [ ] Print "all even: " followed by "true" if all of the integers in the list are even and "false" otherwise.

- [ ] Print "some even: " followed by "true" if some of the integers in the list are even and "false" otherwise.

- [ ] Print "I appreciate all that dr. mcgregor does for me".

- [ ] Print "plus 1: " followed by 20 integers, such that the value of each integer is 1 more than the value of an element in the list. For example, if the list contains 1,2,3 then it should print 2,3,4.

- [ ] Print "times 3: " followed by 20 integers, such that the value of each integer is 2 times the value of an element in the list. For example, if the list contains 1,2,3 then it should print 3,6,9.

- [ ] Print "sum: " followed by the sum of the elements in the list.

- [ ] Print "distinct sum: " followed by the sum of the distinct elements in the list.

- [ ] Print "sum of even: " followed by the sum of the even elements in the list.

- [ ] Print "sum of largest 5: " followed by the sum of the largest 5 elements in the list.

- [ ] Print the first 20 elements in the Fibonacci sequence.