**Writing code in Java to finish the following Programming Exercises.**

**Task 1:**

(*Maximum element in* ***ArrayList***) Write the following method that returns the maximum value in an **ArrayList** of integers. The method returns **null** if the list is **null** or the list size is **0**.

**public static** Integer max(ArrayList<Integer> list)

Write a test program that prompts the user to enter a sequence of numbers ending with **0** and invokes this method to return the largest number in the input.

**Task 2:**

(*Largest rows and columns*) Write a program that randomly fills in **0**s and **1**s into an n-by-n matrix, prints the matrix, and finds the rows and columns with the most **1**s.

(*Hint*: Use two **ArrayList**s to store the row and column indices with the most **1**s.)

Here is a sample run of the program:

Enter the array size n: **4** **[Enter]**

The random array is

0011

0011

1101

1010

The largest row index: 2

The largest column index: 2, 3