Homework 2

The *Josephus problem* is the following game: *N* people, numbered 1 to *N*, are sitting in a circle. Starting at person 1, a hot potato is passed. After *M* passes, the person holding the hot potato is eliminated, the circle closes ranks, and the game continues with the person who was sitting after the eliminated person picking up the hot potato. The last remaining person wins. Thus, if *M* = 0 and *N* = 5, players are eliminated in order, and player 5 wins. If *M* = 1 and *N* = 5, the order of elimination is 2, 4, 1, 5, 3 with 3 being the eventual winner.

1. Write a program to solve the Josephus problem for general values of *M* and *N*. Try to make your program as efficient as possible. Make sure you dispose of cells. You will be provided with a JUnit tester that will test your code for various value of M and N. The tester will expect to be able to invoke a method like so:

   ```
   ArrayList<Integer> answer = Josephus.solve(M,N);
   ```

   (where M and N are integers… and the last element of the ArrayList should be the winner)

2. What is the running time of your program?

Submission:

Create a subfolder in your gitlab repository called "HW2" – add your Josephus.java and JosephusTester.java files (which I will give you) to your repository in this subdirectory, and push your changes to the gitlab webserver by the due date.