CCCS 301 Assignment 1

Introduction

You must do this assignment individually, and you should follow all the instructions including all the naming and wording for methods name and project name. In this assignment, you will be given a starter code. You are free to create any helper methods and you are also free to add more test cases if you wish. When you submit your file, make sure that your code compiles and runs even if you cannot complete the program. Do Not submit a file that is not be able to run. You may end up with 0 because of it.

This assignment is worth 10% of your final grade, and it is out of 100 points.

No late assignments are permitted. You will get 0 for a late assignment.

Due Date

See MyCourses

What to submit

- Zip and submit the following projects onto MyCourses: $YOUR_NAME$_A1

Question 1: Crazy series (50 points)

In this session, you need to implement the crazy series method. In the crazy series, you will be given a starting number. Then, you need to subtract 3 for each number until we reach a negative number. After we reach a negative number, you need to add 3 until we reach the starting number. Note that the input number must be greater than 0.

For example,

crazySeries(5) should return ArrayList [5, 2, -1, 2, 5]

crazySeries(9) should return ArrayList [9, 6, 3, 0, -3, 0, 3, 6, 9]

Question 2: Ben number (50 points)

Ben has difficulty coming out with an assignment question, then he created a weird number called Ben number which is the sum of a Ben series. Given a starting number, in the Ben series, the number should double at even index, whereas the number should be added 1 at odd index (Assuming the index starting from 1).

Example of a Ben series,

Assume the starting number = 5, and total numbers are 6, then the series should be

[6, 12, 13, 26, 27, 54]. Then the Ben number should be 138 because of 6+12+13+26+27+54.

Thus, given the method benNumber(m,n), for all m, n > 0

benNumber(2,5) should return 45 because 3+6+7+14+15 =45

benNumber(3,8) should return 213 because 4+8+9+18+19+38+39+78 =213

benNumber(1,1) should return 2

Note that you can only use recursion to solve these methods, and you cannot use any loop. You are free to add new methods or any parameters.

ZIP your project and hand it in to myCourses when you are done. Please DO NOT RAR it or use other compression extension like .7z, you will lose marks because of it.