RECURSION PROJECT

General Requirements:

1) **Encapsulation: Your program must demonstrate correct encapsulation techniques, including:**
    a. **Correct visibility modifiers for all instance variables**
    b. **Use of a constructor to initialize/instantiate all instance variables**
    c. **Accessor/mutator methods for all instance variables**
2) **Client Class: A client class that sufficiently allows the user to interact with your standalone class. This interaction may occur through pop-up input boxes, or a full GUI.**
    a. **NOTE: Input and output may only be handled here.**
3) **User Input: User input may be accepted through input boxes and output may be displayed via a message box. Both may also be accomplished through a full GUI.**
4) **Documentation: All programs must have the following:**
    a. **Class header comments**
    b. **Method header comments**
    c. **Block commenting (comments explaining the function of major portions of your code)**
5) **Readability: All programs must exhibit a high level of readability.**
6) **User friendliness: All prompts (input/output) must be descriptive and informational to the user.**
7) **User-controlled exit: User is asked if they want to continue or exit the program BEFORE the program shuts down. This may also be accomplished through the traditional "X" button of a full GUI.**

Project Description:

The only major requirement for this project is to design a program that utilizes a recursive algorithm at its core. There are many different programming problems/mathematical concepts that may employ this type of an algorithm:

- The N-Queens Problem
- The Tower of Hanoi Problem
- Solving a Rubik's Cube
- Sierpiński's Triangle/Sierpiński curves
- Fractals

You may choose any of the above problems, or design your own project.