COMP 482 Project 6

BACKGROUND: "*and she's buying the stairway to heaven…"- Led Zepplin*
The stairway to heaven in Led Zepplin's song can be of size n steps. from the ith step you can go up either (i+1) steps or (i+2) steps. What is the total number of unique ways you can reach the top?

OBJECTIVE: Solve the above problem using dynamic programming (either top-down or bottom-up). "n" will be a positive integer (it cannot be 0).

Input Format: The input file will be called input6.txt and be in the same directory as the java and class files. The format of input6.txt will be a standard text file containing whitespace (spaces/tabs/newlines) separated integers. Please note to put a single space between numbers to act as a delimiter (see examples below)!

Output: A single number which represents the total number of unique ways to reach the top of the stairway to heaven

EXAMPLE #1: Given an input6.txt file of:
2

Then the output would be:
2
Starting from step 0 go up 1+1
Starting from step 0 go up +2

EXAMPLE #2: Given an input6.txt file of:
3

Then the output would be:
3
Starting from step 0 go up 1+1+1
Starting from step 0 go up 1+2
Starting from step 0 go up 2+1

EXAMPLE #3: Given an input6.txt file of:
4

Then the output would be:
5
Starting from step 0 go up 1+1+1+1
Starting from step 0 go up 1+1+2
Starting from step 0 go up 1+2+1
Starting from step 0 go up 2+1+1
Starting from step 0 go up 2+2

Project information and Project Submissions:
- Projects will be done **ONLY** in **Java** (No other languages will be accepted)
- Students should begin to work on projects when the project specifications are released.
- Projects will be released as early as possible to students, and you are encouraged to complete the projects as early as possible. Even if a topic has yet to be covered, if students have taken the time to learn the material beforehand, feel free to attempt projects early and submit them early.
- You will be able to submit your project as many times as you wish until the deadline given. (**For a regrade you must submit the project at least 7 days prior to the deadline otherwise there will be no regrade**)
- Late projects will not be accepted.

Projects must be submitted as follows:

- You must submit your project to Canvas **ONLY.** Email submissions will not be accepted.
- The file must be submitted in a ".zip" format
- The ".zip" file should be named with your First and Last name with the project number at the end (Example: DinoBiel1.zip)
- If working in visual studio please do not zip the entire project. Only zip the ".java" file (doing this will cost you points!)
- you must use the DEFAULT package, if not sure how to do this, ask the professor.
- Failure to comply with the rules above will result in a major loss of points on the project!

Grading Rubric: When grading your projects I will assign grades based on the following criteria:
- Does the project work according to the specification including reasonable time complexity? – **50%**
- Does the project utilize the concepts requested in the specification? – **30%**
- Is the code provided in the project well formatted? – **10%**
- Does the code contain sufficient and useful comments to explain sections of the code? – **10%**