Northern Marianas College

CS 229 – Java Programming

Project 2: Dice Rolling Project

Objective:

This project will provide an experience with repetition structures, arrays, and graphed output. It will also provide an indication of how quickly the Java program can process data.

Requirements:

Create a Java program that will simulate the rolling of two dice five million times. The program must display the number of times each sum was rolled 2 through 12 and display a bar graph to provide a visual summary of the results. The graph should have a scale factor of one graphed character equates to fifty thousand rolls of dice. You may use either a Dialog box using the JOptionPane.showMessageDialog method or text output using a System.out.printf. Sample output is provided below.

This program will require the use of a one-dimensional array of integers, at least one for loop, and the random number method `Math.random()`. The random number generator is discussed in detail in the textbook on pp. 348-350.

Problem Solving Phase (Thursday, April 27)

Create an initial flow chart for this project and turn it in by April 27.

Implementation Phase (Thursday, May 4)

Create a working program that will effectively roll the two dice 5,000,000 times and provide a graphical output display of the results. Verify that each run of the program provides different numerical results. You can write the results of each run to a file.

Print your final flow chart that you created in PowerPoint. Print your code and create a one paragraph description of your experience with this project. Answer the question, how many seconds does it take your computer to execute your program?

Print out your results for two runs of the program. Do your results correlate with what is expected. Answer Are your results Do the results Also summary of your experand email me a copy of the DiceRoller.java file

.

Results

The distribution for 5,000,000 rolls of two dice is:

```
02 = 139,183  |==
03 = 277,104  |=====
04 = 416,525  |========
05 = 556,463  |===========
06 = 694,130  |=============
07 = 834,087  |===============
08 = 694,284  |=============
09 = 556,020  |===========
10 = 415,672  |========
11 = 277,838  |=====
12 = 138,694  |==
```

Scale factor = 1:50,000

OK