**COP 3330 Spring 2024**

Assignment 2

GUIDELINES

Your all source codes have the statement at the beginning.

package assignment2;

In other words, all your source code will be in the same package. Do not use default packaging.

Your code should compile fine. Non compiling submissions will receive a penalty.

**Part A**

For this part you will create a die (6 faces) class which have those specifications below. The classname will be *Die*

- Die class will have a no argument constructor which will initialize faceValue to 1.

- Die class will hold *private faceValue* with integer type as an instance variable.

- You will write a method to get the *faceValue* of the Die.

- You will also write a *void setFaceValue* method to set the faceValue of the die using the method arguement which will be an integer.

- Die class will have a void roll method. This method will roll the die randomly, creating a number between 1 to 6, both inclusive. In other words, it will change the faceValue randomly. This method will not print anything.

**Part B**

For this part you will create a Dice class which holds 2 *private* Die objects as instance variables.

- Die class will have a no argument constructor which will initialize faceValues of the both dies to 1.

- You will write a method to get the faceValue of the Dice which is the sum of the faceValues of the 2 dice.

- Die class will have a *void roll* method. This method will roll both Dice. This method will not print anything.

**Part C**

For this part you will create a DiceTester class which will do the following:

(name of this class will be your *lastname\_firstname.java*)

DiceTester will have the main method inside. The other classes won’t have any main method inside.

You will roll the dice 1000 times. After each roll, you will store number of occurrences of the faceValues in an integer array.

Then you will print those values starting from 2 until 12 after rolling the Dice 1000 times.

You will also draw a histogram graph shown below. They y axis will start from 150 and decrease by 25 until 0.

Please take note of the spaces on x axis numbers. If the x axis number has one digit there are 2 spaces. If the x axis number has 2 digits there is one space between them.

Example output:

Number of 2s are 37

Number of 3s are 63

Number of 4s are 89

Number of 5s are 110

Number of 6s are 143

Number of 7s are 160

Number of 8s are 127

Number of 9s are 106

Number of 10s are 77

Number of 11s are 59

Number of 12s are 29

Graph

150| \*

125| \* \* \*

100| \* \* \* \* \*

75| \* \* \* \* \* \* \*

50| \* \* \* \* \* \* \* \* \*

25|\* \* \* \* \* \* \* \* \* \* \*

0|\* \* \* \* \* \* \* \* \* \* \*

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2 3 4 5 6 7 8 9 10 11 12

Notes:

All the instance variables stated in this assignment will be private, whereas all the methods will be public.