CSCE 145 Homework 4: Playing Dice

Objective: Understand Simple Classes and Methods

Write a Java program that will allow two people to play a game of dice and will keep track of their winnings and losses. At the end, it will send an email with the result of the game. The program must satisfy the following requirements:

Download and use the class called **Die (http://www.cse.sc.edu/~carrollh/CSCE145/lib/Die.java)** that represents the rolling of a die. Also download the class that displays an instance of a **Die** graphically, called **ShowDie (http://www.cse.sc.edu/~carrollh/CSCE145/lib/ShowDie.java)**. A **Die** is defined by one instance variable: a *value* of type int, which must be between 1 and 6. The instance variable should be private. The class has methods to *construct* a **Die**, to *get* the value of a **Die**, to *display* a **Die**, and to *roll* a **Die**.

Write a Java class named **BankAccount** that can be used to keep track of a player's current balance. Each instance of a **BankAccount** has private instance variables for the *name* of the account holder (a String) and the *balance* (an int). The class has five public methods to *construct* a **BankAccount**, to *get* the value of a **BankAccount**, to *display* a **BankAccount**, to *deposit* to a **BankAccount**, and to *withdraw* from a **BankAccount**.

Create a driver class called **PlayDice** that uses the methods in the **Die** and **BankAccount** classes. It should create two **BankAccount** objects for the two players and then allow the players to play as many games of dice as they wish. You are free to decide what it means for a player to win or to lose. To help with writing the **PlayDice** class, here is a similar class called **TestDie (http://www.cse.sc.edu/~carrollh/CSCE145/lib/TestDie.java).**

At a minimum
● When the program runs, it should first print its name and/or purpose
● The program should construct two dice
● The program should next ask for the names of the two players.
● Using these names, it should create a BankAccount for each and start each with a balance of $1000
● The program should ask each player how much he/she would like to wager. If either player enters 0, the game will end. If either player enters more than the current balance, the program will print a message that the player is trying to cheat and the game will end
● The program will then roll the two dice, display the result, state whether or not each player has won or lost, and deposit the winning amount or withdraw the losing amount from each player's account
● When the game ends due to either player entering a wager of 0, the game will send an email to yourself with the players' names and their final bank balances (NOW OPTIONAL – 10pts Extra Credit)
● Your source code must conform to good programming style, with all comments in Javadoc format.

Upload your source code to the CSE DropBox at https://dropbox.cse.sc.edu

Remember that your source code MUST have appropriate headers and MUST contain appropriate comments.