WA4

WEEKLY ASSIGNMENT 4
BME 121, FALL 2016

Due Wed Oct 5 at 4:30 pm

ASSIGNMENT

The file wa4Start.cs contains an executable C# program which is supposed to play a simple set of dice games. Each player rolls two dice. The values on the dice are used to determine who wins each game. The first game is won by the player with the smallest minimal value of the two dice. The second game is won by the player with the largest maximal value. The third game is won by the player with the largest sum of the two dice. The fourth game is won by the player with the largest difference between the two dice values (using largest minus smallest). The fifth and final game is won if one player has the only double, that is, is the only player having both dice showing the same value. In any of the five games, a tie (no winner) is also possible.

To make the game work properly, it will be necessary to complete the Dice class, used to hold/report information about one roll of two dice. It will also be necessary to complete the Program.Main( ) method, which uses the Dice class. Some sample output is shown below. You can also run the solution provided in the file SampleSolution.zip.

```
PS C:\Users\Freeman\Desktop\wa4\Dotnet Core> dotnet run
Project Dotnet Core (.NETCoreApp,Version=v1.0) was previously compiled. Skipping compilation.

Player 1, dice = (2,6), min = 2, max = 6, sum =  8, difference = 4, double = False
Player 2, dice = (6,6), min = 6, max = 6, sum = 12, difference = 0, double = True

              Game   Winner
  Smallest minimum : Player 1
   Largest maximum : Tie
       Largest sum : Player 2
Largest difference : Player 1
       Only double : Player 2

PS C:\Users\Freeman\Desktop\wa4\Dotnet Core> dotnet run
Project Dotnet Core (.NETCoreApp,Version=v1.0) was previously compiled. Skipping compilation.

Player 1, dice = (2,5), min = 2, max = 5, sum =  7, difference = 3, double = False
Player 2, dice = (3,2), min = 2, max = 3, sum =  5, difference = 1, double = False

              Game   Winner
  Smallest minimum : Tie
   Largest maximum : Player 1
       Largest sum : Player 1
Largest difference : Player 1
       Only double : Tie

PS C:\Users\Freeman\Desktop\wa4\Dotnet Core>
```

Complete the Dice class by adding two nonstatic fields to hold the value of each of the two dice. (Don't alter the static field holding the random number generator.) In the constructor method for the Dice class, you will need to generate and store in your nonstatic fields two random integers in the range from 1 to 6. Each of these can be done using randomNumberGenerator.Next(1, 7). The six remaining methods in the Dice class, currently written as stubs that return constant values, can then be altered to return the correct results based on the values stored in the two nonstatic fields holding the dice values. Finally, the Program.Main( ) method can be completed by replacing the statements displaying "?" with correct code.

SUBMISSION

Name your C# program file as wa4.cs. Use Bme121.Wa4 as your namespace identifier. Include the standard doc-comment block. Submit wa4.cs at the following url.

https://georgefreeman.ca/fileuploader