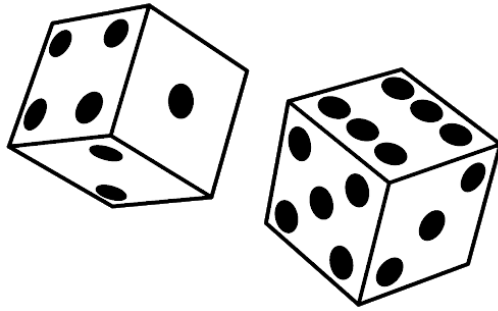# Project: The probability distribution of a dice rolling game

We often play luck-based board games involving dice rolling. In this game program we will explore the probability of rolling each sum in rolling 2 and 3 dices. Your game program will work as follows:

- You will prompt the user with a welcome message:
    "Welcome to dice-roll simulator".
- Your game will proceed to prompt the user with the message:
    "Would you like to roll 2 or 3 dices?"
- You will wait for the user to input the value 2 or 3. Now suppose the user inputs 2. Your game will proceed with the message:
    "We will now simulate rolling 2 dices. How many times would you like to roll 2 dices?"
- Your program will wait for the user to input a positive integer value (i.e. between 1 and 200) less than 200. Suppose your user inputs 95. Your game will proceed with the message:
    "We will roll 2 dices 95 times. "
    "Rolling…… this will take a few seconds, please wait."
- Your game will SLEEP for 3 seconds to simulate actual dice roll.
- After having slept 3 seconds, your game will now continue and produce for the user the result of the rolls. Remember that each roll is the sum of the 2 dices. Suppose your game rolled the sum 7 85 times, 11 5 times, 4 3 times, 2 once, and 12 once. Your game will display for the user the following:
    "We've finished rolling 2 dices 95 times and obtained the following result:
    2 has been rolled 1 times
    7 has been rolled 85 times
    11 has been rolled 5 times
    4 has been rolled 3 times
    12 has been rolled 1 times"
- Your game will end here and display a good-bye message to the user:
    "Thank you for using the dice-roll simulator, see you next time!"

Important Notes:
1. The order by which you print the dice roll results does NOT matter.
2. You must take care of bad inputs from the user and re-prompt the user to enter proper inputs.
3. You ONLY have to simulate rolling 2 dices. If you want to also simulate rolling 3 dices, see options below. However, if you choose not to simulate rolling 3 dices, your game should gracefully tell the user "Simulating 3 dices feature has not been implemented. Please choose rolling 2 dices."

Options: There are a number of options available, **you must do option 5**. You may choose any other options to do (I recommend attempting at least option 1). Doing 3 or more options (including option 5) will make you eligible for a level 4 or higher in the application category.

Option 1: ASCII art decoration - Decorate your welcome and good-bye message of your game with pretty borders and other ASCII art you want (if you are curious, look up some ASCII art on google) to make your game look pleasing to the player.

Option 2: Include a "grand loop" for your game. That is, at the end of a simulation, your game prompts your user "would you like to run another simulation?" If the user says "yes", your program starts all over again. If the user says "no", display the good-bye message.

Option 3: Display the result of the dice rolls in DECREASING order, from the sum that occurred the most frequently to the sum that occurred least frequently.

Option 4: Display the result of the dice rolls in SUM order. That is, display the result for the sums 2, 3, 4, … 11, 12, etc.

Option 5: Visual Representation - represent the result of your rolls using an ASCII art chart with stars "*". For example, a roll (of 2 dice) of 2 2s, 8 7s, 2 9s and 1 12 can produce the following chart.

1:
2: **
3:
4:
5:
6:
7: *******
8:
9: **

10:

11:

12: *

You may use single "*"s to represent any quantity of a value, as long as your chart more-or-less resembles the overall results distribution pattern.

Option 6: Implement your dice-roll simulator for 3 dices. Remember that the result of each roll is the sum of 3 dices.