

## *PROG8420 – Programming for Big Data*

### *Assignment 02*

Submission: Individual

#### Requirements

For the following problem:

- Each module must be written in Python and submitted as an executable .py file (NOT the Jupyter notebook file)
- Each module must have header comments at the top of the program that include:
  - o The Course
  - o The assignment number
  - o The submission or creation date
  - o The author's name
- Comments should be used to help explain your code if it may need explanation

#### Question 1

Write a module that simulates the rolling of 1 or more dice, then compare the theoretical with the actual results.

- The user must be asked how many dice will be used in the simulation. The number of dice should be between 1 and 16 inclusive. Your code should validate the user entry.
- The user must be asked for the number of rolls of the dice to simulate. Your code should validate the user entry to be a positive integer with a minimum value of 1.
- Your program must count the number of times each total of the dice faces appears. For example, if you have 3 dice, you will count the number of times 3, 4, 5, .... 18 appears.
- Your program must display a list of values representing the percentage of the total that each total appears, the theoretical likelihood, and the percentage error between the two values.

The name of the file must be of the form: *FirstName\_LastName\_A02\_Q1.py*, where *FirstName* and *LastName* are your first name and last name respectively.

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## Question 2

Write a module that counts the number of times each word appears in paragraph.

- The user must be able to enter a number of sentences. You can assume that each sentence ends in a period. (No other punctuation needs to be considered.) You may use any mechanism you wish to enter the sentences. However, you must explicitly tell the user what they need to do when entering.
- When the user finishes entering the sentences, the program displays each unique word found in the paragraph, along with a count of how many times that word appears. The list must be displayed in alphabetical order.
- Unique words are not case sensitive. For example, 'House' and 'house' are considered the same.

The name of the file must be of the form: *FirstName\_LastName\_A02\_Q2.py*, where *FirstName* and *LastName* are your first name and last name respectively.

## Submit

- Submit both files into the appropriate folder in eConestoga.

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