

Topics:

Data structure selection: String, List, Dictionary, Tuple.

[120 points]

1. Book Statistics

[30 points]

Write a program that reads a file (a book), processes the text (divides into words, removes unnecessary symbols, etc.), and calculates the following as a result:

- a) Total number of words in the book;
 - b) Total number of different words;
 - c) 10 most frequently used words in the book;
 - d) Given a word list, print out all the words in the book that are not in the word list.
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2. “Guess Number” Game

[20 points]

Write a program that will generate a random number from 0 to 100, and ask the user to guess it. Each time the user enters a number the program shall say whether the given number is bigger or smaller than the desired result.

- a) The game runs repeatedly until the user finds the number, and display the total number of guesses made;
 - b) The program gives maximum of seven trials.
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3. Probability

[20 points]

Exercise 13.5 in the textbook

4. Probability

[30 points]

Exercise 13.5 in the textbook

5-Bonus. Markov Analysis

[20 points]

Exercise 13.8 in the textbook
