Unit 2

Apply what you know

0. Study the programs in the *Learn something new* section until you can write them yourself from scratch without relying on this document or any other source of information. Here are the programs:

    0.1. List the lines in the file **pap.txt** that contain the word 'property'.

    0.2. Count the number of words in the file **pap.txt**.

    0.3. Count the number of times the word 'the' appears in the file **pap.txt**.

    0.4. Find and display the line in the file **pap.txt** containing the most words.

1. Write a program that counts the number of times the lowercase letter 'e' is used in the file **pap.txt**.

2. Write a program that checks *itself* and reports the number of lines of the program that contain the word 'for', either alone or as part of another word.

3. Write a program to determine which word is the shortest of the following: apple, banana, peach, plum, grapefruit.

4. Write a program to determine the average of the numbers given in a list. The first line of your program should give a name to a list of numbers to be averaged: e.g. **numbers = [3, 17, 1, 44, 239]**.

5. The list method **append** changes a list by adding an item at the end. For example if **students** refers to the list [**'Ed' 'Ted', 'Fred'**], then after calling **students.append('Jennifer')** the list will be [**'Ed' 'Ted', 'Fred', 'Jennifer'**]. Write a program using this method to print a list of the lengths of the words given in a list. The first line of your program should give a name to the list of words, e.g. **students = ['Ed', 'Ted', 'Fred', 'Jennifer']**. For this example, the output would be [**2, 3, 4, 8**].

6. The built-in function **input** displays a string on the screen and returns a string containing what the user types in response. For example, the statement **answer = input('How are you feeling? ')** will display the given question and wait for the user to type something and press enter. Then **answer** will be assigned to a string that holds what the user has typed. Write a program using **input** that asks the user to type in any number of words and then reports the maximum number of vowels contained in a single word, e.g. 'please' is a six-letter word containing three vowels.