Back-to-Basics Revision: Recursion

Task 1

A Fibonacci number is defined as follows:

- `fibonacci(0) = 0`
- `fibonacci(1) = 1`
- `fibonacci(n) = fibonacci(n - 1) + fibonacci(n - 2)`

The task is to write a function for generating the Fibonacci values.

Task 1.1

Write a recursive function to find out the Fibonacci number of `n`.

Task 1.2

Write also an iterative version of the function.

Task 2

The task is to calculate the total value resulting from individual values entered by a user.

Task 2.1

Write a recursive function that reads real numbers from the user until a blank line is entered.

Display the total of all the numbers entered by the user (or `0.0` if the first value entered is a blank line).

Task 2.2

Write also an iterative version of the function.

Task 3

A string is a palindrome if it is identical forward and backward e.g. "civic", "level", "solos", "madam", "racecar".

The task is to determine whether a given word is a palindrome.

Task 3.1

Write a recursive function that reads a string from the user and determines whether or not it is a palindrome.

Task 3.2

Write also an iterative version of the function.