MPP - Assignment 2 (15%)

Tasks

For each of the following write a functional, recursive, function in Python to accomplish the task. Marks will be award for correct solutions and for comments explaining how the function works.

1. **Sum of an array** Given an array of numbers return it's sum (all the numbers added together).

2. **Product of an array** Given an array of numbers return it's product (all the numbers multiplied together).

3. **Remove all odd numbers** Given an array of numbers return an array with all the odd numbers removed.

4. **Remove all even numbers** Given an array of numbers return an array with all the even numbers removed.

5. **Replace a given character with '*'** Given a string, and a character to replace, return a string where each occurance of the character is replaced with '*'.

6. **Find index in array for item**. Given an array, and an element to search for return the index of the element in the array or -1 if the element is not present in the array.

7. **Sum of Digits** Given a whole, number such as 23, return the sum of the digits in the number i.e. $2 + 3 = 5$. For this would be useful to convert the number to a string then break it apart into digits.

8. **Print an array** Given an array of integers prints all the elements one per line. This is a little bit different as there is no need for a 'return' statement just to print and recurse.

9. **Find the minimum element in an array of integers.** You can carry some extra information through method arguments such as minimum value.

10. **Verify the parentheses** Given a string, return true if it is a nesting of zero or more pairs of parenthesis, like "(())" or "((()))".