A-Level Computer Science

Recursion Programming Worksheet

Programming Exercise 1: Sum Numbers (E/D Question)

Write a recursively-defined function called **SumTo** which sums the first **n** positive non-zero integers. The function will take one parameter **n**. Before programming consider the **Base Case** and the **General Case**.

The program will allow a user to enter any value of **n** and it will output the sum calculated.

e.g Entering a number 8 will cause the output 36 to occur.

Programming Exercise 2: Is it a Palindrome? (C-A Question)

A palindrome is a word that can be read backwards and be the same. e.g. HANNAH, RACECAR

Write a recursively-defined function called **IsPalindrome** which takes a String value **word** and returns ‘True’ if the word entered **is** a palindrome or ‘False’ if it is not.

Steps to take:

Inside the IsPalindrome Function:

1. If the word is a single letter long or is null then It **Is** a palindrome
2. Otherwise if the first letter = last letter and the middle of the word IsPalindrome then it is a palindrome else it is not.

Step 2 includes the recursive element that the function will call itself with the word in the middle.

e.g. HANNAH - it will compare H & H and say Yes these equal – it will then call the Function again with ANNA. If at any point it fails, it will return FALSE.