The University of the South Pacific

School of Computing, Information & Mathematical Sciences

CS 112 Data Structures and Algorithms

Tutorial Week 9

(Recursion)

Problem Statement

You are required to write a recursive function to determine the sum of *n* consecutive positive integers. A sequence of *n* consecutive positive integers can be given as:

$\{1, 2, 3, 4, 5, \ldots, n\}$

The summation of n consecutive numbers can be given as:

$$\sum_{x=1}^{n} x = 1 + 2 + 3 + ... + n$$

To make a recursive function you must have:

- Base case: To stop the recursion.
- General case: reduce the bigger problem (function) to smaller problem (function) in every recursion.

Figure out the general case of the given problem then deduce the base case.

Requirement:

1. Find out the sum of first 10 consecutive numbers using your function.
2. Find out the sum of first 25 consecutive numbers using your function.
3. Find out the sum of consecutive numbers from 11 to 25 using your function.
4. What will be the sum of consecutive number from -5 to 0? What your function should do to avoid wrong calculations?

- Anurag Sharma