**Lab 5**

**Recursion and Stack**

# Objectives

After completing this experiment, you will be able to:

For each of the programming exercises, demonstrate your program to the instructor, format and comment your program appropriately.

# Procedures

**Question 1:**

Write an assembly program to find the sum of Natural Numbers using Recursion given C code as follows ((<https://www.geeksforgeeks.org/c-program-to-find-sum-of-natural-numbers-using-recursion/>):

**int** recSum(**int** n)

{

  // Base condition

**if** (n <= 1)

**return** n;

  // Recursive call

**return** n + recSum(n - 1);

}

Write the MIPS program that fulfills these requirements:

* assume **arr** is in **$a0**.
* save the return address, $ra since there is a function call. It's usually easy to tell whether to save the return address to the stack. If there's a function call, then save it.

Electronically submit yourfullname\_Lab62.s. Your code will be graded on commenting, correct output, and code correctness.

**Report:**

**-Run: Test input: n is the two last digits of your ID**

**-stack and recursion 🡪please capture step by step the address of stack, or recursion 🡪 explain result with coding**

**-Coding🡪 clearly comments**