## **Recursion using Program Stack**

Create a program that generates the first N Fibonacci numbers.

Prompts the user for the maximum length of the series of numbers.

Calculates the Fibonacci result for each number in the sequence starting from zero.

Presents the result of each Fibonacci calculation to the user.

Make the Fibonacci calculation a recursive routine.

Input:	Please enter the length of the series of Fibonacci number to calculate. (any integer between 1 and 50).
Output:	Working on Fibonacci number n The Fibonacci Result is: NNNNNNN The Golden ratio is: RRRRRRR : Working on Fibonacci number n-1 The Fibonacci Result is: NNNNNNNN The Golden ratio is: RRRRRRR : Working on Fibonacci number n The Fibonacci Result is: NNNNNNN The Golden ratio is: RRRRRRR : End of Program

Next divide each Fibonacci number (excluding zero) by its former Fibonacci number to arrive a the "Golden Ratio". Show that the number approaches and converges to the golden ratio.

The "Golden Ratio" is: 1.61803398874989484820458683436563811772030917980576286213544862270526046281...

Have your lab show at least the first 10 significant digits. Such as: 1.6180339887

Demonstrate condition code, memory and register debugging where you feel necessary.