

IEEE - RE & Cryptography SMP 2018

Assignment 1

Assembly Programming

Due Date: 27/5/2018 11:59 p.m.

1. Write assembly code for the following problems.
 - a. Find the factorial of any number of your choice using the iterative method. Note: Focus on getting the logic right. Take an input number of your choice.
 - b. Array Addition - Add corresponding elements of 2 integer arrays and store the result in a new third array. Note: Take 2 pre-defined sufficiently large arrays as input. You do not have to output the new array.
 - c. Check if a given string is palindrome or not. Use a system call to read user input for the string
 - d. The digital root R of a number N is calculated as follows:
Find R as the sum of the digits of N. Find a new R by summing the digits of R, repeating until R has only one digit.
For example: the digital root of 478137 is 3.
Find the digital root of a number taking in user input.

Note: Please avoid plagiarism. The point of the assignment is so that you guys can apply the concepts you have learnt. If you have any doubts, post them on #assignment on the Slack channel and we'd be happy to help.

Resources:

- <http://www.cs.virginia.edu/~evans/cs216/guides/x86.html>
- https://en.wikibooks.org/wiki/X86_Disassembly/Data_Structures
- https://github.com/adwait1-G/Malware-Analysis/blob/master/Reverse_Engineering/x86_architecture/basic_x86.md
- <https://syscalls.kernelgrok.com/>