

CS 429 Homework 8

Name: _____ Section #: _____

Instructions: Work these problems on your own paper, type them into a file, and submit on Canvas. As usual, you may collaborate with your classmates and ask for assistance from the TA. But don't copy anyone else's answer. Each problem is worth the same number of points (more or less).

1. Write an x86-64 assembly language routine that will take four longs (x, y, z, w) and perform double precision addition. That is, treat xy as one 128-bit integer and zw as another. Write the code to return a 128-bit result. You can return the result in %rbx and %rax, with the high order bytes in %rbx. Don't forget to carry out of the low result word into the high word. (There's an x86 instruction that makes that easy, but you can do it without that.)
2. Do problem 3.65 on p. 317 of Bryant and O'Hallaron.
3. Do problem 3.68 on p. 320 of Bryant and O'Hallaron.
4. Complete the leet code easy problem Univalued Binary Tree located at leetcode.com/problems/univalued-binary-tree in C. Include the function in your submission for this homework. Hint: Check your answer on leet code before submitting.