CS 758/858 Homework 1: Sorting

Tue Sep 1 2026

These are some suggestions to help you prepare for quiz 1.

1. Study counting sort, invariants, and big-O notation.
2. Exercise 2.1–2 in CLRS.
3. Exercise 2.1–4 in CLRS.
4. What is the memory complexity of counting sort?
5. prove whether or not $32n^2 - 2n + 10,000 = O(n^2)$
6. prove whether or not $32n^2 - 2n + 10,000 = O(n^3)$
7. prove whether or not $0.2x^2 - 456x + 2^{20} = O(n^2)$
8. prove whether or not $5n^3 + \lg n = O(n^3)$
9. (858 only) Problem 3–1, parts a, b, and c.