Checkpoint 1

2 pages of notes

Up through 2/15 (no material from this week)

Will make checkpoint from last semester available (note, it was challenging)

Checkpoint 1 topics

Math foundations
- log properties
- properties of exponentials

Proofs by induction (weak, strong, and structural)

Big-O (theta and omega)
- Proving and disproving
- Categories and function ordering

Checkpoint 1 topics

Recurrences
- Generating (i.e., given a function/algorithm, write the recurrence)
- Solving: recurrence tree, substitution, master method

Sorting
- Insertion sort, Selection sort, Mergesort, Quicksort
- Runtimes, properties (in-place, stable)

Order statistics
- median/selection
- run-time

Checkpoint 1 topics

Data structures

• BSTs, red black trees, binary heaps, binomial heaps

• Run-times and functionality basics

Amortized analysis

• Aggregate and accounting methods