

# Final Exam—Summer 2018:

## Study Guide

- General—the basics only: Java programming model, Data Structures, APIs, Entropy, bags/stacks/queues, induction, analysis of algorithms (complexity);
- Sorting—the basics: Quicksort, Mergesort, Insertionsort;
- More detail from mid-term exam onwards (see next slide)

# Final Exam—Spring 2018: Study Guide

- Searching/Symbol tables: Symbol tables, Hash-tables with separate chaining and linear probing; BSTs, 2-3 and red-black trees [but *not* detail of rotations in R/B trees];
- Graphs: data structures, depth-first and breadth-first search; DAGs: topological sort; minimum spanning trees;
- Reduction

# Likely coding topics

- Mergesort/Quicksort
- Topological sort
- Symbol table: separate chaining
- Dijkstra's algorithm

# Exam conditions

- There will be a blackboard portion (approx. 70 minutes)—open book.
- Students must finish this portion, close their books, notes, phones, etc. before moving to HackerRank.
- There will be a HackerRank portion (approx. 100 minutes)—usual coding conditions—closed book, screen lock.