

Exam #2 preview (in one page!)

Prof Bill, Mar 2020

Details:

- ❖ It's 20 points, 20% of your grade.
- ❖ The exam will be two parts: Blackboard and live on Zoom.
- ❖ Blackboard questions will require short answers.
- ❖ My one-on-one Zoom questions will be mostly drawing and code snippets.
- ❖ Bring your one side of one page of notes. I will grade this!
- ❖ Our 5 study areas are: Java inheritance, The JCF, Recursion, BST, and balanced trees. (see below) These areas won't necessarily get an equal weight in the test.
- ❖ Any homework, reading, PK, and Program #2 are also fair game. My notes are on the Lecture Page, wtkrieger.faculty.noctrl.edu/csc210-spring2020/lecture.html

thanks...yow, bill

Areas of study, terms, etc

1. Java inheritance — class, abstract class, interface; public, private, protected; inheritance, is-a, composition, has-a; override, overload; Object class, keywords, UML diagram, ctor and inheritance, polymorphism

2. The JCF — Collections, collection, list, set, map; generic, ArrayList, LinkedList, HashSet, TreeSet, HashMap, TreeMap; Comparable, Comparator, compareTo(), advantage of each; enhanced for loop

3. Recursion — base case, recursive case; tail recursion, why slower than iteration, Fibonacci example, recursive data structure, Mandelbrot set tattoos

4. Binary search tree (BST) — rules, Big-oh expected and worst case, insert and search, code, recursive methods; preorder, inorder, postorder; put(), get(), delete()

5. Balanced trees — rationale, why $O(\log n)$; full binary tree, complete binary tree; B-tree, 2-3-4 tree, red-black tree, heap; heap as an array, access equations, advantage; rules, insert, and search for all of the above