CSC148 winter 2014
sorting, recursion limits
week 11

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Outline

$O(n \lg n)$ sorts compared
You will have a chance in lab to tweak merge_sort, quick_sort, and tim-sort (Python’s built-in sort). You can get some idea of how they scale by running sort.py

- why does tim-sort do so well?

- what is with count_sort anyway?
Some programming languages implement the simplest recursions as loops, but Python doesn’t. One consequence is that our first draft of \_contains\_ can easily exceed the recursion depth. Rewrite it with while
redundant function calls

The most intuitive version of fibonacci ends up making many redundant function calls:

```python
def fib(n):
    """Return the nth fibonacci number""
    if n < 2:
        return n
    else:
        return fib(n - 1) + fib(n - 2)
```
Never compute the same thing twice (if you can help it)!
test 2 coverage...

Everything since test 1:

- linked lists (more than one implementation)
- linked binary trees
- binary search trees
- big-Oh