

# CS-HU 390

## Big-O

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# Outline

- Big O Story
- Sample Problems
- Whiteboarding!!!



# Big O Story

Overview of Big-O from the author of the textbook

<https://www.youtube.com/watch?v=v4cd1O4zkGw>

Another review: <https://www.youtube.com/watch?v=V6mKVRU1evU>



# Big-O Sample Problems

- Examples 13, 15. [PP 52-54. Cracking the Coding Interview]



# Big-O Sample Problems

- Problem VI.10

```
int sumDigits(int n) {  
    int sum = 0;  
    while (n > 0) {  
        sum += n % 10;  
        n /= 10;  
    }  
    return sum;  
}
```



# Big-O Sample Problems

- Problem VI.12

```
int intersection (int[] a, int[] b){  
    mergesort(b);  
    int intersect = 0;  
    for (int x: a) {  
        if (binarySearch(b, x) >= 0) {  
            intersect++;  
        }  
    }  
    return intersect;  
}
```



## In-class Exercise

**Exercise 1.1.** Implement an algorithm that determines if a string has all unique characters? [p. 90 of the textbook]

What if you cannot use any additional data structures?

- What assumptions do you need to make?
- How much is the run-time complexity of your solution?
- How much is the space complexity of your solution?