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Overview of Module 3

Welcome to module 3. It is all about randomness in algorithms and data structure design. We will cover two very important topics:

1. Quicksort: a very "slick" sorting algorithm originally invented by Sir Tony Hoare which is a prototypical application of randomness in algorithm design. We will study the basic quicksort and analyze randomized quicksort. It will be our first brush with the dreaded average time complexity.
2. Hash function-ology: we will look at randomization in hashtables. We will see how randomizing a data structure makes it resilient to the unknown behavior of how the user/application will employ the data structure. This is very important for hashtables and we will look into this topic as well this week.

Background on Probabilities

This is the week you will need to bring out some of your probability text books and get acquainted with the basics. You may want to learn some of the following topics:

- Basic probabilities.
- Probability distributions
- Expectations

However, it is possible to accommodate a "need-to" approach. First take a stab at the material this week and ask for help if some concepts are unclear.

Assignments

The assignment structure will remain the same as the previous week. We will also have a programming assignment,

✓ Completed