Data Structures

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Contents

Chapter 1

Introduction

Education in Computer Science is based around three core topics: how to solve problems, how to organize data the for solving problems, and how to formulate solutions for problems in a way that a computer can understand.

Data Structures is all about defining the different ways we can organize data.

1.1 To The Instructor

Chapter 2

Lists

The first data structure we will be studying is the list. The list is by far the most relateable data structure, as humans deal with lists on a regular basis

2.1 What is a list?

When you get right down to it, lists are defined by order.

```java
public static <E> boolean isPermutation(List<E> listA, List<E> listB) {

        if(listA.size() != listB.size()) {
                return false;
        }
        for(int i  = 0; i < listA.size() ; i++){
                E item =  listA.get(i);
                int countA = 0;
                int countB = 0;

                for (E element : listA) {
                        if(item.equals(element)){
                                countA++;
                        }
                }
                for (E element : listB) {
                        if(item.equals(element)){
                                countB++;
                        }
                }
                if(countA != countB) {
                        return false;
                }
        }
        return true;
}
```

2.2 ArrayLists

2.2.1 Building an ArrayList

2.3 Big O

2.3.1 Cost

2.3.2 Space Complexity

2.3.3 Formal Mathematics

2.4 LinkedLists

2.4.1 Building a LinkedList

2.5 Analysis

Chapter 3

Stacks

3.1 Building a Stack

3.2 Mazes

Chapter 4

Queues

4.1 Discrete Finite Automata

Chapter 5

Recursion

5.1 Recursive Mathematics

5.2 Recursive Problem Solving

5.2.1 Recursive Backtracking

5.2.2 Recursive Combinations

Chapter 6

Trees

Chapter 7

Sorting

7.1 Quadratic-Time Algorithms

7.2 Insertion Sort

7.3 Bubble Sort

7.4 Recursive Sorting Algorithms

7.5 Unique Sorting Algorithms

7.5.1 Shell Sort

7.5.2 Radix Sort

7.6 State of the Art Sorting Algorithms

Chapter 8

Sets and Maps

Chapter 9

Graphs

Chapter 10

Other Data Structures