

HW2: Searching and Sorting

CSS 501 – Data Structures & Object-Oriented Programming
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Summary

Part of everyday “magic” that consumers take for granted is the ability to sort as well as search through massive amounts of data with ease. Explore a basic implementation of this as well as the time complexity of your implementation.

Skills Expected

- Linked Structures
- Algorithm: Searching and Sorting
- Big-O Notation

Assignment Description

Create a doubly-linked data structure used to keep track of objects containing at least one sortable property (e.g. item for sale { price, size }, books { author, title, genre }, etc.). Choose a [sorting algorithm](#) (or make your own) to implement (**Do NOT use the sort() method with Vector**). Demonstrate “ascending” as well as “descending” sort. Also implement a basic search function.

Grading Criteria

- Implementation **(10 Points Total)**:
 - [2 Points] Doubly-Linked Structure
 - [1 Points] Object with at least one sortable property
 - [2 Points] Ascending Sort
 - [2 Points] Descending Sort
 - [3 Points] Search
- Demonstration **(7 Points Total)**:
 - [1 Point] doubly-linked list structure with at least 10 objects
 - [2 Points] Ascending Sort
 - [2 Points] Descending Sort
 - [2 Points] Search
- Big-O Analysis **(3 Points Total)**:
 - [1 Point] Ascending Sort
 - [1 Point] Descending Sort
 - [1 Point] Search