

11. Computer Science Thinking: Recursion, Searching, Sorting and Big O

Objectives

- Learn the concept of recursion.
- Write and use recursive functions.
- Determine the base case and recursion step in a recursive algorithm.
- Learn how the system handles recursive function calls.
- Compare recursion and iteration, including when it's best to use each approach.
- Search for a given value in an array using linear search and binary search.
- Sort arrays using the simple iterative selection and insertion sort algorithms.
- Sort arrays using the more complex but higherperformance recursive merge sort algorithm.
- Use Big O notation to compare the efficiencies of searching and sorting algorithms.
- Use Seaborn and Matplotlib to build an animated selection sort algorithm visualization.

Outline

- [11.1 Introduction \(/11_01.ipynb\)](#)
- [11.2 Factorials \(/11_02.ipynb\)](#)
- [11.3 Recursive Factorial Example \(/11_03.ipynb\)](#)
- [11.4 Recursive Fibonacci Series Example \(/11_04.ipynb\)](#)
- [11.5 Recursion vs. Iteration \(/11_05.ipynb\)](#)
- [11.6 Searching and Sorting \(/11_06.ipynb\)](#)
- [11.7 Linear Search \(/11_07.ipynb\)](#)
- [11.8 Efficiency of Algorithms: Big O \(/11_08.ipynb\)](#)
- 11.9 Binary Search
 - [11.9.1 Binary Search Implementation \(/11_09.01.ipynb\)](#)
 - [11.9.2 Big O of the Binary Search \(/11_09.02.ipynb\)](#)
- [11.10 Sorting Algorithms \(/11_10.ipynb\)](#)
- [11.11 Selection Sort \(/11_11.ipynb\)](#)
 - 11.11.1 Selection Sort Implementation
 - 11.11.2 Utility Function print_pass
 - 11.11.3 Big O of the Selection Sort
- [11.12 Insertion Sort \(/11_12.ipynb\)](#)
 - 11.12.1 Insertion Sort Implementation
 - 11.12.2 Big O of the Insertion Sort
- [11.13 Merge Sort \(/11_13.ipynb\)](#)
 - 11.13.1 Merge Sort Implementation
 - 11.13.2 Big O of the Merge Sort
- [11.14 Big O Summary for This Chapter's Searching and Sorting Algorithms \(/11_14.ipynb\)](#)
- [11.15 Visualizing Algorithms \(/11_15.ipynb\)](#)
 - 11.15.1 Generator Functions
 - 11.15.2 Implementing the Selection Sort Animation
- 11.16 Wrap-Up
- Exercises

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