Extension Project: Sorting

Abstract

Sorting is a hugely important part of computer science. Infact, according to Skiena, computers spend approximately 25% of their time sorting, so doing this efficiently is hugely important.

Introduction

You have looked at some sorting algorithms already, though, now you have tasked with writing these algorithms in Python.

Task

Write the following algorithms in Python:

1. Selection sort
2. Insertion sort
3. Bubble sort

After the session on recursion, you may also be able to attempt:

4. Mergesort
5. Quicksort

Extension

Have a look at your solution to selection sort. The most natural way to express this is iteratively, compared to mergesort, where the most natural way is recursively. Could you implement selection sort recursively?

Questions?

Please let us know! These tasks are intended to be difficult, so we want to talk to you about them. If you have not covered any of these sorting algorithms in class, then we can provide you with information about how they work.

A useful tool to help you visualize sorting algoriths can be found at: https://visualgo.net/sorting.