Assignment 2
Algorithms and Data Structures 1 (1DL210)
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1 Comparison

What are the differences between the three algorithms? For each algorithm, mention a situation where it has an advantage over the other two.

Insertionsort is good if you need to sort a lot of shorter vectors, where you already know that many of them will already be correctly sorted. This is because the best-case of insertionsort is better than the other algorithms, i.e. the time when the vector is already sorted. This situation could appear when verifying that a collection of smaller vectors are sorted in order.

Quicksort is on average faster than both insertionsort and heapsort since it scales better than insertionsort and won't do the time consuming element swaps which heapsort uses.

Heapsort is on average faster than insertionsort, but a little bit slower than quicksort. However the quicksort algorithm's worst case is far worse than heapsort. Meaning that heapsort is preferable when a more reliable algorithm is needed.