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Section: 9

Lab assignment 1

Task1a:

We insert the given values and test whether it is an even or odd number based on conditions. The loop runs as much as the test case demands.

Task1b:

Here the approach is the same as Task1a. we pick up the operator and act accordingly.

Task2:

I have added a flag that acts as an indicator whether there is any swap in the first outer loop iteration. If there is not swap in the first outer loop iteration, then the array is already sorted. Thus, the loop can break early, running 1 time instead of n times.

Task3:

Here I have chosen selection sort so I can ensure there is a minimum number of swaps. Line 9 and line 10 indicate that I have only swapped once per outer loop iteration in both lists.

Task4:

Using selection sort in task4, I first sort the trains by name. Then using the same algorithm again, I sort the trains according to the time order wanted in the question. In the second instance, I use a helper function to ease the process.