

1 Smart Sort

In this assignment, you are expected to implement a function called `smart_sort` that sorts its sequence input in the following manner. If the size of the input sequence is less than 50, the items should be ordered with insertion sort algorithm, otherwise they should be sorted with merge sort.

For the implementations of the quick sort and merge sort algorithms, you may prefer to use the implementations provided in the textbook. However, `smart_sort` should be able to handle both `list` and compact array (Please revisit lecture 5.) objects as input. Furthermore, if the input sequence is `list`, then `smart_sort` should check the items in the array if they all have the same type, and if items are in type of either `int` or `float` or `string`. `smart_sort` should also be able to handle the corner cases such that the input could be an empty sequence or a sequence with only a single item.

2 Delivery Instructions

Please hand in your module as a single file named as `smart_sort.py` over ODTUClass by 11:59pm on due date. An Assignment-04 page will be generated soon after the start date of this assignment. Should you have any questions pertaining to this assignment, please ask them in advance (rather than on the due date) for your own convenience. Whatever IDE you use, you have to make sure that your module could be run on a Python interpreter:

```
1 from smart_sort import smart_sort
2 a = [4,2,1]
3 smart_sort(a)
4 print(a) # [1,2,4] should be printed
```