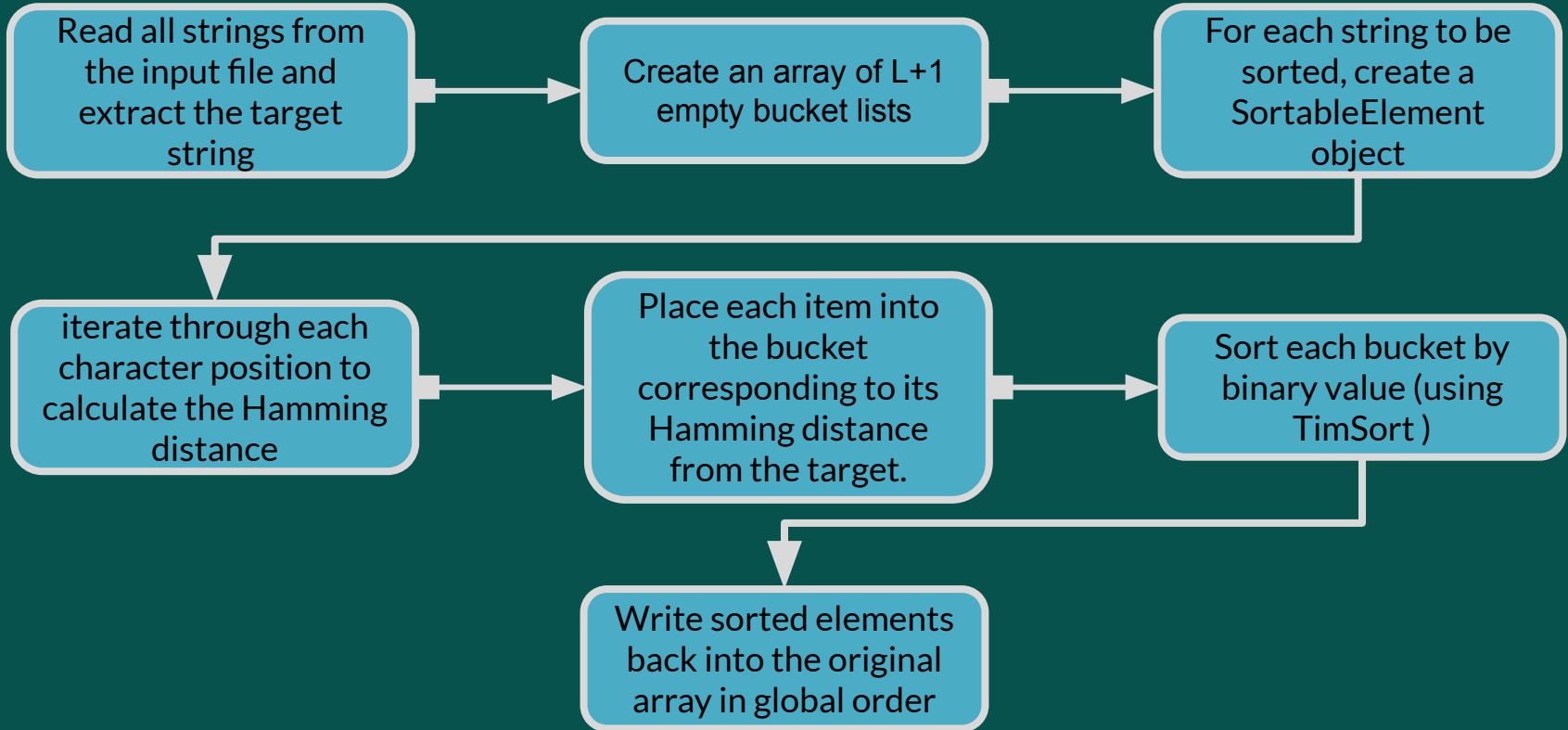# Sorting Competition Presentations

Group 10

Code from: Emma Sax
Presented by: George Savvas

General Information:

- 1st place
- Sum of median time is 304.0ms
    - 252, 255, 252, Median: 252.0
    - 52, 42, 55, Median: 52.0
- Sorted correctly (no correctness issues)
- Average runtime of O(n*L)
  (if the strings are evenly distributed in the buckets)
- Memory of O(n*L)

How It Works:

Read all strings from the input file and extract the target string → Create an array of L+1 empty bucket lists → For each string to be sorted, create a SortableElement object

iterate through each character position to calculate the Hamming distance → Place each item into the bucket corresponding to its Hamming distance from the target. → Sort each bucket by binary value (using TimSort)

Write sorted elements back into the original array in global order

New Data Structures

Buckets Array -
`ArrayList<SortableElement>[] buckets`

`SortableElement` Wrapper Objects

Target Character Array -
`char[] targetChars`