ASSIGNMENT 3

Time Values

20 Elements

Array : 0.0300000

List : 0.0400000

50000 Elements

Array: 400 minutes

List: 520 minutes

100000 Elements

Array: 624 minutes

List: 600 minutes

Efficiency

Based on the results above when dealing with a few elements its faster to use an array as it would just be easier to copy a small amount into a new array. When it comes to more Elements Link list seems to outperform array. Array would be better to sort through because it benefits from having the ability to randomly access anywhere in the array, while linked list has to be sequential. I would say array are better.

Merge analysis

The merge for linked list was an O(n) notation because it would repeatedly pass over every input thus the time spent sorting and merging it correlates with how big the data is. For arrays it would be an insertion sort classified as O(n^2) notation.