Running Time Analysis Report

Empirical vs. Expected Growth:

Input size 20 compared to 10:

 - Empirical time growth factor: 1.52

 - Expected growth factor (O(n log n)): 1.60

Input size 50 compared to 20:

 - Empirical time growth factor: 8.93

 - Expected growth factor (O(n log n)): 2.08

Input size 100 compared to 50:

 - Empirical time growth factor: 1.54

 - Expected growth factor (O(n log n)): 1.71

Input size 200 compared to 100:

 - Empirical time growth factor: 0.01

 - Expected growth factor (O(n log n)): 1.75

Input size 500 compared to 200:

 - Empirical time growth factor: 565.73

 - Expected growth factor (O(n log n)): 2.22

Input size 1000 compared to 500:

 - Empirical time growth factor: 0.88

 - Expected growth factor (O(n log n)): 1.80

Input size 2000 compared to 1000:

 - Empirical time growth factor: 2.56

 - Expected growth factor (O(n log n)): 1.82

Input size 5000 compared to 2000:

 - Empirical time growth factor: 1.36

- Expected growth factor (O(n log n)): 2.12

Input size 10000 compared to 5000:

 - Empirical time growth factor: 11.09

 - Expected growth factor (O(n log n)): 1.86

Graph of Empirical Running Time vs O(n log n):

Empirical Running Time vs O(n log n)