BBM204 ASSIGNMENT 1 REPORT

Burak Karademir

March 15, 2018

PROBLEM DEFINITION

In this assignment we must choose three sort algorithms and implement these three algorithms in java. We must compare execution times and memory requirements with given inputs for the algorithms we chose.In the inputs files we must sort the lines according to the numbers in selected column which is given in arguments and we must measure the time.The input files are different so that we are able to measure the time.In this assignment our goal is to observe sort algorithms , the time complexities and memory requirements.

FINDINGS

Table 1: My caption

Algorithm and Data Set	**TrafficFlow100**	**TrafficFlow1000**	**TrafficFlow50000**	**TrafficFlow100000**	**TrafficFlowAll**
Selection Sort Algoritm	0.010	0.043	4.4	13.8	85.4
Insertion Sort Algoritm	0.010	0.045	1.281	3.76	37.4
Merge Sort Algoritm	0.011	0.038	0.4	0.61	1.3

DISCUSSION

Among the time complexities of three algorithms the best one is merge sort.In addition insertion sort and selection sort algorithms are almost the same, there are little difference between two algorithms.Selection sort's time complexity is O(n^2), selection sort's time complexity is O(n^2) and merge sort's time complexity is O(nlog(n)). When the input size gets bigger, elapsed time increases.In merge sort this increase is not too much but in other algorithms the increase is too much. About memory requirements, merge sort is the best one and others are not so good.But insertion is a little better than selection sort.In small size inputs the difference is not too much but when the input size gets bigger, the difference between merge sort and others increase.Selection sort and insertion sorts are not so different. TrafficFlowAll and trafficFlow100000 inputs needs too much memory and time for sorting.If your computers ram is not enough your computer can not handle with big inputs or you can face with some errors.