Hacettepe University
Department of Computer Engineering

Student ID: 21527065
Student Name/Surname:Süleyman Gürsoy
Lesson:BBM-204 Software Practicum
Subject:Algorithm Analyze

1- Sofware Usage

I used Eclipse Mars 2 as IDE.

2- Purpose of The Assignment

I. Examining sorting algorithms
II. Observing run times of distinct sort algorithms

3- Used Algorithms

I. Selection Sort

In selection sort, we are picking the smallest member of list and place in increasing order. We don't touch ordered part and applying same producer for remaining list.

II. Insertion Sort

Picking an element[i] and insert it into appropriate position.

III. Quick Sort

Quick sort is as known divide and conquer algorithm. We are picking an element as pivot and partitioning the given array around the picked pivot. Comparing the pivot and other list members, if smaller than pivot taking place left of the pivot. If greater than pivot the taking place right of the pivot.

4- Run Times

Algorithm & Data set	Traffic Flow 100 (sec.)	Traffic Flow 1000(sec.)	Traffic Flow 50000(sec.)	Traffic Flow 100000(sec.)	Traffic Flow All (sec.)
Insertion Sort	2*10^-3	66*10^-3	450	1671	9480
Selection Sort	4*10^-3	43*10^-3	274	965	>216*10^3
Quick Sort	2*10^-3	7*10^-3	86*10^-3	187*10^-3	527*10^-3

5- Observations

While algorithm run time is decreasing, the memory usage is increasing. Same opposite relation be valid for other situation. While run time is increasing, the memory usage decreasing.