Time Complexity report

This report displays the result of the experiment about time complexity using Java’s own time measurement call, System.nanoTime().

# Introduction

# Method

For measurement between appending and concatenation.

# Result

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Run  Calls | 1 character | | 80 characters | |
| Appending | Concatenation | Appending | Concatenation |
| 1 | 97900 | 79000100 | 11100 | 4299200 |
| 2 | 98100 | 79000100 | 10700 | 4299200 |
| 3 | 97800 | 79000600 | 11100 | 4299200 |
| 4 | 98500 | 79000600 | 11300 | 4299200 |
| 5 | 97400 | 79000600 | 11300 | 4299200 |
| Average | 97940 | 79000400 | 11100 | 4299200 |

Table 1: Comparison between appending and concatenating string. Time limit: 1 sec. Increment: 100 calls difference.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Run  Calls | Integers | | Strings | |
| Insertion Sort | Merge Sort | Insertion Sort | Merge Sort |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| Average |  |  |  |  |

Table 2: Comparison between insertion and merge sort on array. Time limit: 1 sec. Increment: 100 items per run.

# Discussion

Based on prior knowledge, it is obvious that

Reliability of the result

There are many factors which could affect the result of the experiment.