Comparing sorting algorithms

Here I will represent the **approximate data** collected after **running tests 3 times**.

The first one is for **comparing sorting algorithms**:

Time is in seconds.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Method** | **n = 10** | **n = 50** | **n = 100** | **n = 1000** | **n = 10 000** | **n = 100 000** |
| **Insertion** | 0.0003050 | 0.0003133 | 0.0003743 | 0.0003830 | 0.0005646 | 0.0019973 |
| **Selection** | 0.0002918\* | 0.0002810\* | 0.0003666\* | 0.0052722\* | 0.4874063\* | 36.7242795 |
| **Merge** | 0.0003972 | 0.0003878 | 0.0004618 | 0.0091327 | 0.0046459 | 0.0412130 |
| **Quick** | 0.0003059 | 0.0002983 | 0.0003484 | 0.0005884 | 0.0016629 | 0.0146958 |

|  |  |  |
| --- | --- | --- |
| **Method** | **n = 1 000 000** | **n = 10 000 000** |
| **Insertion** | 0.0156922 | 0.1606021 |
| **Selection** | over 20 mins | “hungs” |
| **Merge** | 0.7306732 | 21.5942738 |
| **Quick** | 0.06820617 | 1.7865833 |

\*Used mine version of Selection sort algorithm which is slower.

Actually there is something wrong with this Insertion sort algorithm. I personally believe that other sort methods are not optimized for performance because they have higher complexity level and are implemented to be understood by the programmer not by the machine.

The whole information gathered could be found in “\..\bin\Debug\Algorithm data.txt”.