**Comparison Table - 1**

Fixed: Range of the elements 1~100 Variable: Array Length

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Array Length | Time | | | Swap | | | Comparisons | | |
| 1,000 | 0.004 | 0.001 | 0.002 | 246177 | 385740 | 990 | 499500 | 385740 | 499500 |
| 5,000 | 0.134 | 0.038 | 0.043 | 6215938 | 7504620 | 4935 | 12497500 | 7504620 | 1297500 |
| 10,000 | 0.493 | 0.152 | 0.260 | 24521751 | 35860075 | 9894 | 49995000 | 35860075 | 49995000 |
| 50,000 | 13.141 | 3.197 | 4.423 | 617373671 | 680171764 | 49469 | 1249975000 | 680171764 | 1249975000 |
| 1,00,000 | 64.180 | 17.274 | 20.868 | 2480542302 | 3541191617 | 98975 | 4999950000 | 3541191617 | 4999950000 |
|  | Bubble | Insertion | Selection | Bubble | Insertion | Selection | Bubble | Insertion | Selection |

**Comparison Table - 2**

Fixed: Length of the Array 1000 Variable: Array Element Density

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element Range | Time | | | Swap | | | Comparisons | | | |
| 1~100 | 0.003 | 0.002 | 0.002 | 250617 | 328587 | 987 | 499500 | 328587 | 499500 |
| 1~500 | 0.006 | 0.001 | 0.002 | 259131 | 330355 | 988 | 499500 | 330355 | 499500 |
| 1~1,000 | 0.004 | 0.003 | 0.001 | 241393 | 476987 | 989 | 499500 | 476987 | 499500 |
| 1~5,000 | 0.003 | 0.002 | 0.002 | 247517 | 353998 | 990 | 499500 | 353998 | 499500 |
| 1~10,000 | 0.004 | 0.004 | 0.001 | 252579 | 412871 | 992 | 499500 | 412871 | 499500 |
| 1~50,000 | 0.005 | 0.003 | 0.002 | 239339 | 383555 | 995 | 499500 | 383555 | 499500 |
|  | Bubble | Insertion | Selection | Bubble | Insertion | Selection | Bubble | Insertion | Selection |