|  |  |
| --- | --- |
| **Array Size** | **Time take (s)** |
| 100 | 0 |
| 500 | 0.015999794 |
| 1000 | 0.046999931 |
| 2000 | 0.281000137 |
| 3000 | 0.594000101 |
| 4000 | 0.934000015 |
| 5000 | 1.141000032 |
| 7500 | 2.625 |
| 10000 | 4.5849998 |

Report on the performance of Insertion Sort Algorithm

Insertion sort algorithm was implemented in python programming language and arrays of random numbers generated using the python in-built random library and method randrange. The arrays were sorted with the written insertion sort program and the times taken were tabulated and graphed.

It could be observed that the time taken to sort increases exponentially with the size of the input array. This is analogous to the time complexity of O(n2) obtained by analysis of insertion sort.