**BUBBLE SORT**

**Analysis Table:-**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Best Case** | | | **Average Case** | | | **Worst Case** | | |
|  | **Instruction** | **Compare** | **Exchange** | **Instruction** | **Compare** | **Exchange** | **Instruction** | **Compare** | **Exchange** |
| **5** | 50 | 10 | 0 | 59 | 10 | 3 | 80 | 10 | 10 |
| **10** | 175 | 45 | 0 | 205 | 109 | 10 | 310 | 45 | 45 |
| **15** | 375 | 105 | 0 | 459 | 45 | 28 | 690 | 105 | 105 |
| **20** | 650 | 190 | 0 | 785 | 190 | 45 | 1220 | 190 | 190 |
| **25** | 100 | 300 | 0 | 1228 | 300 | 76 | 1900 | 300 | 300 |

**COMPLEXITY:-**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **INSTRUCTION** | | | **COMPARE** | | | **EXCHANGE** | | |
|  | **BEST CASE** | **AVERAGE**  **CASE** | **WORST CASE** | **BEST CASE** | **AVERAGE**  **CASE** | **WORST CASE** | **BEST CASE** | **AVERAGE**  **CASE** | **WORST CASE** |
| **Practical Complexity** |  |  |  |  |  |  |  |  |  |
| **Theoretical Complexity** |  |  |  |  |  |  |  |  |  |