**1.8** Sort an array of integers using the bubble sort technique. Analyze its time complexity using Big-O notation

**AIM**:

To sort an array of integers using the bubble sort technique and analyze its time complexity using Big-O notation.

**ALGORITHM:**

1.​ Start with a list of unsorted elements.

2. Iterate through the list from the first element to the last.

3.​ For each element, compare it with the next element.

4.​ If the current element is greater than the next element, swap them.

5.​ Repeat steps 2-4 until the list is sorted.

6.​ The largest element will "bubble" to the end of the list after the first pass.

7.​ The process is repeated for the remaining unsorted elements until the entire list is sorted.

**PROGRAM:**

A screenshot of a computer program

AI-generated content may be incorrect.

Input:

3,5,2,15,32,1

Output:

A screenshot of a computer program

AI-generated content may be incorrect.

**RESULT:**

Thus the bubble sort technique program is successfully executed, and the output is verified.

**PERFORMANCE ANALYSIS:**

* Worst-Case and Average-Case Time Complexity: O(n^2)
* Best-Case Time Complexity: O(n)
* Space Complexity
* O(1) – Bubble Sort is an in-place algorithm.