# Unit 2.1 – Algorithms;

# Lesson 3 – Bubble Sort

## Activity 2 (Low)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
| 3 | 5 | 1 | 9 | 4 |

**Data in a list is shown:**

The top row shows the element number in the list, the bottom row shows the value that is being stored and to be sorted.

Fill in the tables below, showing the results of each swap.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
| 3 | 5 | 1 | 9 | 4 |

**Compare element 0 and 1**

Is the value in 0 > the value in 1?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  | 1 | 9 | 4 |

If it is swap them in the table on the right.

If not, put them back in the same order as before.

**Compare elements 1 and 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  | 9 | 4 |

Is the value in 1 > the value in 2?

If it is, swap them. If not, put them back.

**Compare elements 2 and 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  | 4 |

Is the value in 2 > the value in 3?

If it is, swap them. If not, leave them in place.

**Compare elements 3 and 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

Is the value in 3 > the value in 4?

If it is, swap them. If not, leave them in place.

**Did you make any swaps?**

If you do, repeat the whole process starting with 0 and 1.

If no, then the list must be in order.

Use the tables on the next page to complete the sort.

Compare the elements, starting with 0 and 1. Keep going until you have gone all the way through without making any swaps

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |
|  |  |  |  |  |

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