One pass of a bubble sort - Solution

Task .

In this task, you need to show each comparison and whether any swaps were made when executing **one pass** of a bubble sort on the cards below. The cards should be ordered from lowest to highest, where ace is considered low.

The instructions for performing one pass of a bubble sort can be written as:

1. Take a list of data to be sorted.
2. Repeat steps a-c for all the items in the list, starting from the first one:
   1. Compare the item at the current position to the one next to it.
   2. If the item at the current position is greater than the one next to it, swap the items within the list..
   3. Go to the next item in the list.

The highlighted areas indicate the cards you need to compare to determine if there is a swap, with the first two comparisons completed for you.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Describe** what happens to the largest card in the list after one pass. How might this affect the number of comparisons that need to be made in the next pass?

| A single pass results in the largest card reaching its final position at the end of the list, since it will always be greater than the card it is next to. This means that the next pass doesn’t need to check the final pair of cards as you know the largest card is in the right place. |
| --- |