Bubble Sort Algo

If you are new to sorting algos, **Bubble sort** is a great place to start. It is one of the more intuitive sorting methods as its algorithm mirrors how our brain generally thinks about sorting - by comparing.

Just like the way bubbles rise from the bottom of a glass, **bubble sort** is a simple algorithm that sorts an array, allowing either lower or higher values to **bubble up** to the top.

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The algorithm traverses the array and compares adjacent values, swapping them if they are not in the correct order.

Bubble Sort only considers one element at a time. Thus, it is highly **time-consuming** and **inefficient**.

Due to its inefficiency, bubble sort is rarely used in production code. It is, however, a good algorithm to get started.

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Below we have a code implementation of Bubble Sort, with an explanation and an example!

```js
function bubbleSort(array) {
  //Create a copy of the original array since bubbleSort will mutate the original array.
  const arr = [...array];

  //We need a double for loop to implement it.
  for (let i = 0; i < arr.length; i++) {
    for (let j = 0; j < arr.length; j++) {
      //We swap if the number at index j is bigger than the number at index j+1
      if (arr[j] > arr[j + 1]) {
        //We create a variable so we have a reference , since it will be changed
        const temp = arr[j];
        arr[j] = arr[j + 1];
        arr[j + 1] = temp;
      }
    }
  }

  return arr;
}

testArray = [1, 5, 10, 22, 300, 2, 500, 67];
const sortedArray = bubbleSort(testArray);
//expected Output [1,2,5,10,22,67,300,500]
console.log(sortedArray);
```