Merge Sort (Implementation)

(Reading time: 6 minutes)

The merge algorithm consists of two functions:

- The mergeSort function, which takes care of partitioning the arrays.
- The merge function, which merges the separate arrays.

```
function mergeSort(array) {
   if (array.length === 1) {
     return array;
   }
   const middle = Math.floor(array.length / 2);
   const left = array.slice(0, middle);
   const right = array.slice(middle);
   return merge(
      mergeSort(left),
      mergeSort(right)
   );
}

function merge(left, right) {
  let result = [];
  let leftIndex = 0;
  let rightIndex = 0;

  while (leftIndex < left.length && rightIndex < right.length) {
    if (left[leftIndex] < right[rightIndex]) {
       result.push(left[leftIndex]);
       leftIndex++;
    } else {
       result.push(right[rightIndex]);
       rightIndex++;
    }
  }

  return result.concat(left.slice(leftIndex)).concat(right.slice(rightIndex));
}
```

In the next lesson, I will discuss the runtime of this algorithm.