

# Merge Sort

## Do now

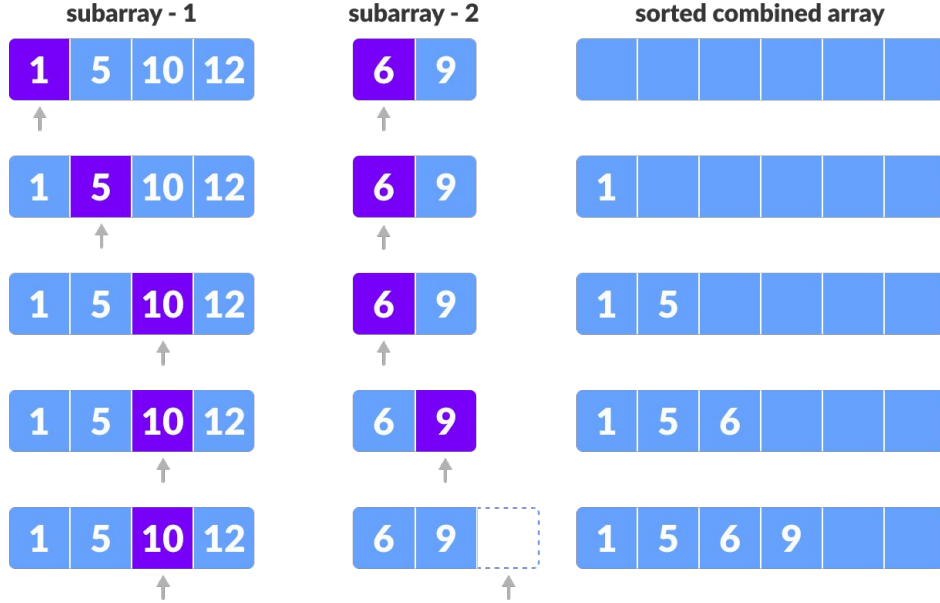
If we have 2 sorted arrays, how would you combine them to have only 1 sorted array?

Input: [4, 8, 9, 20, 25] [2, 5, 7, 12, 30]

Output: [2, 4, 5, 7, 8, 9, 12, 20, 25, 30]



# Merging arrays



Since there are no more elements remaining in the second array, and we know that both the arrays were sorted when we started, we can copy the remaining elements from the first array directly.



# How can we write a merge method in Java?

- Parameters?
- Return?

# How can we write a merge method?

```
public static int[] merge(int [] left, int[] right){  
    }  
}
```

```
public static void merge(int[] destination, int [] left, int[]  
    right){  
    }  
}
```

**Save your code here:** `classwork/xx_merge/Merge.java`

