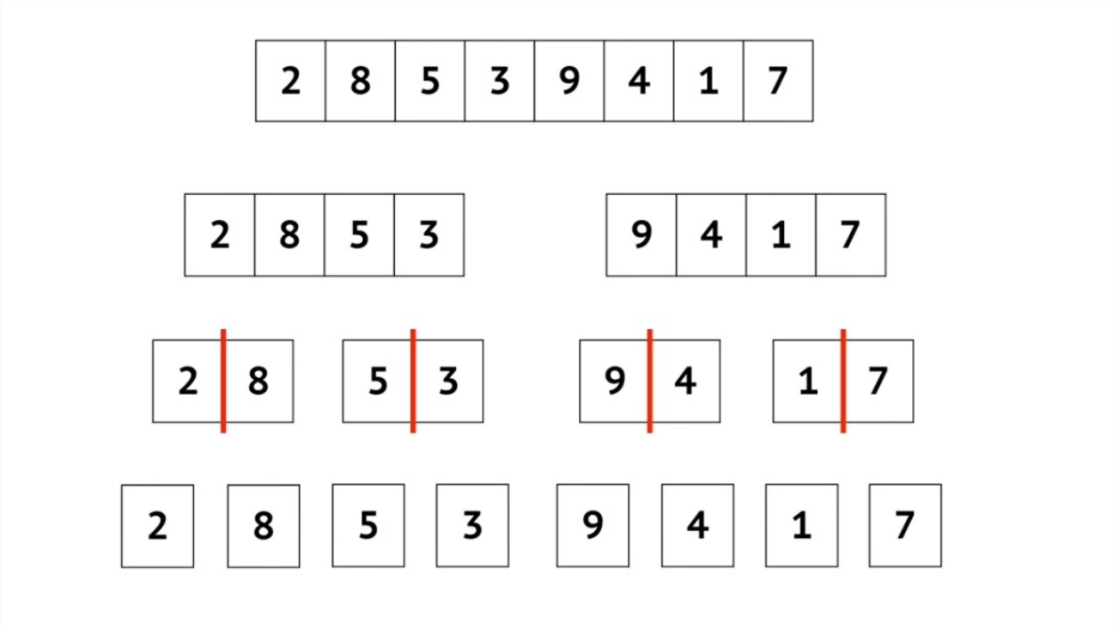
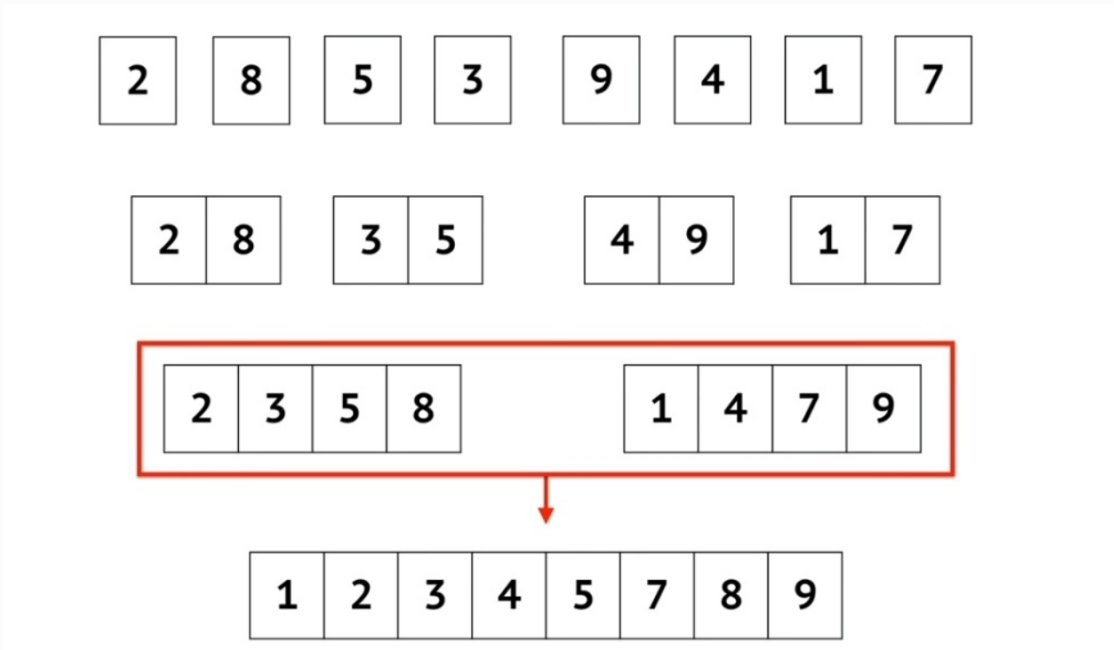
MERGE SORT






```
mergesort (array a)
    if ( n == 1 )
      return a

    arrayOne = a[0] ... a[n/2]
    arrayTwo = a[n/2+1] ... a[n]

    arrayOne = mergesort ( arrayOne )
    arrayTwo = mergesort ( arrayTwo )

    return merge ( arrayOne, arrayTwo )
```

```
merge ( array a, array b )
    array c

    while ( a and b have elements )
      if ( a[0] > b[0] )
        add b[0] to the end of c
        remove b[0] from b
      else
        add a[0] to the end of c
        remove a[0] from a

    // At this point either a or b is empty
```

```
while ( a has elements )
    add a[0] to the end of c
    remove a[0] from a

while ( b has elements )
    add b[0] to the end of c
    remove b[0] from b

return c
```