1 Exercises

Exercise 1. Consider sorting an array $a[]$ containing the following keys, by calling the `sort()` method (shown below) from insertion sort:

```python
def sort(a, key=None):
    n = len(a)
    for i in range(1, n):
        for j in range(i, 0, -1):
            v, w = a[j], a[j - 1]
            if key:
                v, w = key(v), key(w)
            if v >= w:
                break
            _exchange(a, j, j - 1)
```

What is $a[]$ when $i = 5$ (i.e., 5th iteration of the outer loop) and the inner loop (lines 4–10) is complete?

Exercise 2. Which of the following sequences can be merged using the merge operation?

a. `HELLO` and `WORLD`
b. `EHLLO` and `DLORW`

2 Solutions to Exercises

Solution 1. `AEQSTUYION`

Solution 2.

a. No.
b. Yes.