Leetcode Problem 1. (Easy)

Add Binary

Given two binary strings a and b, return *their sum as a binary string*.

Example 1:

Input: a = "11", b = "1"
Output: "100"

Example 2:

Input: a = "1010", b = "1011"
Output: "10101"

Constraints:

- 1 <= a.length, b.length <= 10^4
- a and b consist only of '0' or '1' characters.
- Each string does not contain leading zeros except for the zero itself.

Link: https://leetcode.com/problems/add-binary/

```
class Solution {
    public String addBinary(String a, String b) {

    StringBuilder sb = new StringBuilder();
        int i = a.length() - 1;
        int j = b.length() - 1;
        int carry = 0;

        while (i >= 0 || j >= 0) {
            int sum = carry;
            if (i >= 0) {
                sum += a.charAt(i--) - '0';
            }
            if (j >= 0) {
                sum += b.charAt(j--) - '0';
            }
            sb.append(sum % 2);
            carry = sum / 2;
        }
```

```
        if (carry != 0) {
            sb.append(carry);
        }

        return sb.reverse().toString();
    }
}
```