

Binary Sum

Description:

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:

- The input strings consist only of characters '0' and '1'.
- The length of each input string is at most 10^4 .
- The input strings do not contain leading zeros except for "0" itself.

:The solution

```
def addBinary(a: str, b: str) -> str:
    return bin(int(a, 2) + int(b, 2))[2:]

# Example usage:
print(addBinary("11", "1"))      # Output: "100"
print(addBinary("1010", "1011")) # Output: "10101"
```

:The explanation

1. Convert both binary strings a and b to integers using `int(a, 2)` and `int(b, 2)`.
2. Add the integers.
3. Convert the result back to binary using `bin(sum)[2:]` (to remove the `0b` prefix).

This solution is efficient and works well within the given constraints. Let me know if you need a different approach!