

字符串乘法

为计算大整数之间的乘法运算通常将其转换为字符串进行运算。

```
class Solution {
public:
    std::string multiply(std::string num1, std::string num2) {
        int len1 = num1.size(), len2 = num2.size();
        std::vector<int> res(len1 + len2, 0); // 结果最大长度为len1+len2

        for (int i = len1 - 1; i >= 0; i--) {
            for (int j = len2 - 1; j >= 0; j--) {
                int tmp = (num1[i] - '0') * (num2[j] - '0');
                int sum = res[i + j + 1] + tmp;
                res[i + j + 1] = sum % 10;
                res[i + j] += sum / 10;
            }
        }

        int i = 0;
        for (; i < res.size(); i++) {
            if (0 != res[i]) {
                break;
            }
        }

        std::string result;
        for (; i < res.size(); i++) {
            result.push_back(res[i] + '0');
        }

        return result.size() == 0 ? "0" : result;
    }
};
```